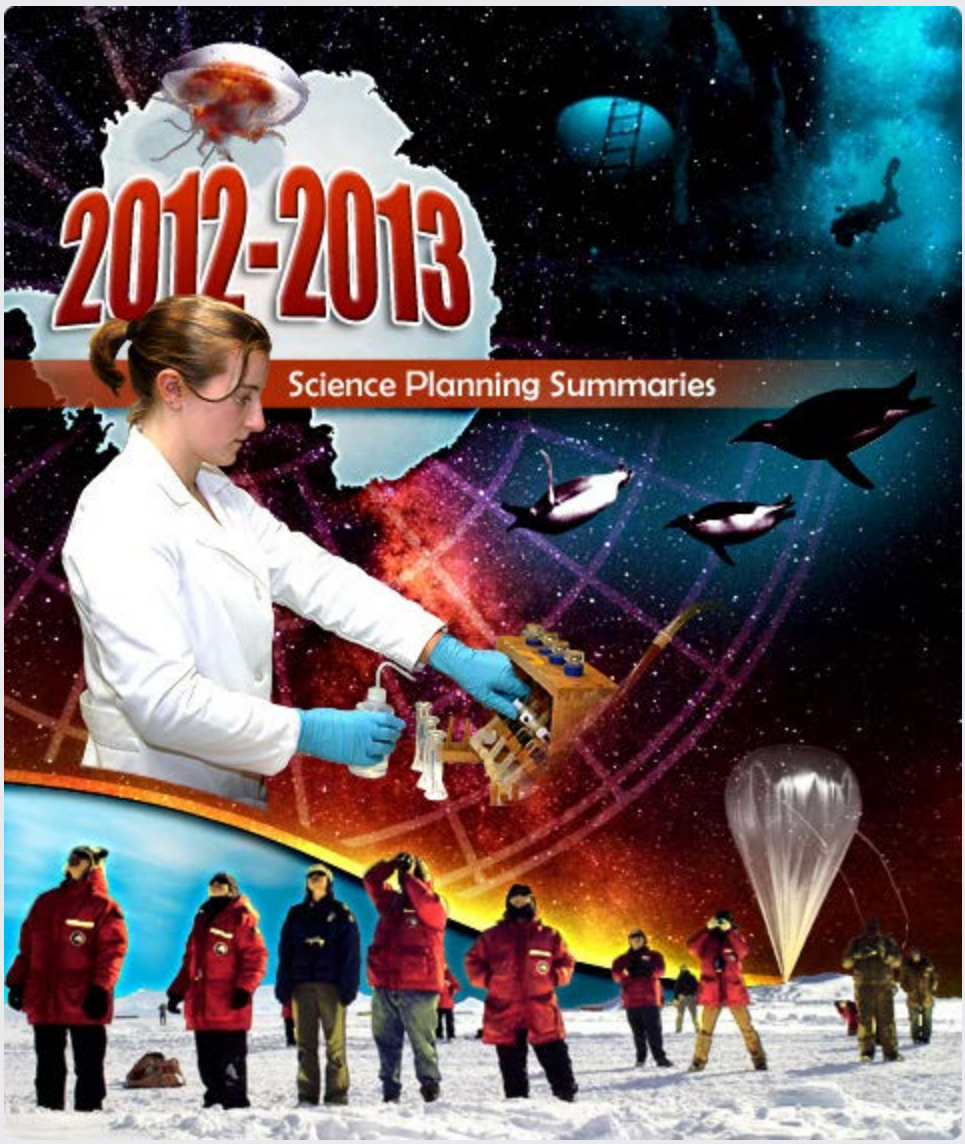


Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Science Program Indexes 2012-2013

- Project Web Sites
- Principal Investigator Index
- USAP Program Indexes
  - Astrophysics and Geospace Sciences
    Dr. Vladimir Papitashvili, program manager
  - Organisms and Ecosystems
    Dr. Diana Nemergut, program director
  - Earth Sciences
    Dr. Alexandra Isern, program manager
  - Glaciology
    Dr. Julie Palais, program manager
  - Ocean and Atmospheric Sciences
    Dr. Peter Milne, program manager
  - Integrated System Science
    Dr. Alexandra Isern, program manager (acting)
  - Artists and Writers
    Mr. Peter West, program manager
  - Education and Outreach
    Mr. Peter West, program manager
- Institution Index
- USAP Station and Ship Indexes
  - Amundsen-Scott South Pole Station
  - McMurdo Station
  - Palmer Station
  - RVIB Nathaniel B. Palmer
  - ARSV Laurence M. Gould
  - Special Projects
- Event Number Index
- Technical Event Index
- Deploying Team Members Index

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Science Program Web Sites 2012-2013

Project Web Sites

Return to Index

Principal Investigator	Event No.	Project Title
Ainley, David	B-031-M	Adelie Penguin response to climate change at the individual, colony and metapopulation levels
Ainley, David	B-042-M	COLLABORATIVE RESEARCH: Penguin foraging reveals phytoplankton spatial structure in the Ross Sea
Anderson, Kent	G-090-P/S	Global seismograph station at South Pole and Palmer Stations
Barwick, Steven	A-127-M	Development of hexagonal radio array for the ARIANNA ultra-high energy neutrino detector
Bentley, Charles	T-350-M	Ice Coring and Drilling Services (ICDS) support for WAIS Divide
Bieber, John	A-120-M	Cosmic ray observations at McMurdo Station
Bindschadler, Robert	C-407-M	IPY: Collaborative Research: Ocean-ice sheet interaction in the Amundsen Sea: The keystone of West Antarctic stability
Bockheim, James	G-239-P	Impact of recent climate warming on active-layer dynamics, permafrost, and soil properties on the western Antarctic Peninsula
Bristow, William	A-369-M/S	McMurdo and South Pole SuperDARN: Investigation of the ionospheric dynamics and magnetosphere-ionosphere coupling in Antarctica
Carlstrom, John	A-379-S	Cosmological Research with the 10-meter South Pole Telescope
Carpenter, Paul	T-299-M	IRIS/PASSCAL seismic support
Cassar, Nicolas	O-405-L	Physiological and ecosystem structure forcings on carbon

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

		fluxes in the Southern Ocean mixed layer
Chereskin, Teresa	O-317-L/N	Collaborative research: Southern Ocean current observations from the U.S. Antarctic research vessels
Chu, Xinzhao	A-130-M	Lidar Investigation of middle and upper atmosphere temperature, composition, chemistry, and dynamics at McMurdo, Antarctica
Conway, Howard	I-209-M	Deglaciation of the Ross Sea Embayment - constraints from Roosevelt Island
Corbett, David	O-176-L/P	Submarine groundwater and freshwater inputs along the Western Antarctic Peninsula
Cottle, John	G-064-M	Exploring the significance of NA-alkaline magmatism in subduction systems, a case study from the Ross Orogen
Devlin, Mark	A-147-M	Balloon-borne Large Aperture Sub-millimeter Telescope (BLAST-POL)
Dolk, Shaun R	X-592-E	NOAA's Global Drifter Program (GDP)
Domack, Eugene	C-515-E/L	Continuation of the LARISSA continuous GPS network in view of observed dynamic response to Antarctic Peninsula mass balance and required geologic constraints
Doran, Peter	B-511-M	McMurdo LTER - Lakes: Increased connectivity in a polar desert resulting from climate warming: McMurdo Dry Valley LTER Program
Ducklow, Hugh William	B-045-L/P	Palmer Long Term Ecological Research (LTER): Looking back in time through marine ecosystem space, microbial ecology component
Engebretson, Mark J	A-102-M/S	Studies of solar wind - Magnetosphere interactions using observations of ULF waves at an extensive ground array at high

		latitudes
Evenson, Paul	A-118-S	Element composition of high-energy solar particles
Firing, Eric	O-317-L/N	Collaborative research: Southern Ocean current observations from the U.S. Antarctic research vessels
Fountain, Andrew	B-504-M	McMurdo LTER - Glaciers: Increased connectivity in a polar desert resulting from climate warming: McMurdo Dry Valleys LTER Program
Fraser, Bill	B-013-L/P	Palmer Long Term Ecological Research (LTER): Looking back in time through marine ecosystem space, apex predator component
Gill, John T	A-336-P	ELF/VLF observation of whistler-mode waves, lightning discharge, and gamma-ray events from Palmer Station
Halzen, Francis	A-333-S	IceCube operations and maintenance
Hanany, Shaul	A-146-M	E & B Experiment (EBEX)
Harvey, Ralph	G-058-M	Antarctic Search for Meteorites (ANSMET)
Harvey, Ralph	G-057-M	The Antarctic Search for Meteorites (ANSMET): Reconnaissance team
Hernandez, Gonzalo	A-110-M/S	Austral high-latitude atmospheric dynamics
Hofmann, Gretchen	B-134-M	Ocean acidification: Integrated approaches to understanding effects on antarctic sea urchins, Sterechinus neumayeri
Hosticka, Bouvard NMI	T-998-P	Operation and maintenance of a CTBT radionuclide monitoring station at Palmer Station
Karle, Albrecht	A-107-S	Collaborative Research: MRI-R2 instrument development of the Askaryan Radio Array, a large-scale radio Cherenkov neutrino detector at the South Pole

Kemerait, Robert	G-078-M	Dry Valley seismic project
Kennicutt, Mahlon	B-518-M	Temporal variability in natural and anthropogenic disturbance of McMurdo Station
Kim, Stacy	B-174-M	Benthic-pelagic coupling in an intact ecosystem: The role of top predators in McMurdo Sound
Kovac, John	A-039-S	Collaborative Research: BICEP2 and SPUD - A search for inflation with degree-scale polarimetry from the South Pole
Kulesa, Craig	A-364-S	High Elevation Antarctic Terahertz (HEAT) telescopes for Dome A and Ridge A
LaBelle, James	A-128-S	Outstanding Questions on Auroral Radiation Fine Structure
LaBelle, James	A-125-S	Application of the AGO network to energy transfer in the radiation belts and remote sensing of auroral plasma processes
Lazzara, Matt	O-283-M	Antarctic Automatic Weather Station (AWS) program
Ledwell, James Robert	O-124-L	Studies of turbulence and mixing in the Antarctic Circumpolar Current, a continuation of DIMES
Lyons, W. Berry	B-509-M	McMurdo LTER - Geochemistry: Increased connectivity in a polar desert resulting from climate warming: McMurdo Dry Valley LTER Program
Marchant, David R	G-054-M	Quantifying surface processes above buried ice in Antarctica: Implications for terrestrial climate change and glaciation on Mars
Martinson, Doug	B-021-L	Palmer Long Term Ecological Research (LTER): Looking back in time through marine ecosystem space, physical oceanography component
Mayewski, Paul	I-173-M	Roosevelt Island Climate Evolution (RICE) project
McKnight, Diane	B-506-M	McMurdo LTER - Streams: Increased connectivity in a polar

		desert resulting from climate warming: McMurdo Dry Valley LTER Program
Min, Larissa	W-491-M	Wondering Gondwana
Mitchell, John	A-142-M	Super Trans-Iron Galactic Element Recorder (SuperTIGER)
Moore, Robert C	A-109-M/P/S	Collaborative Research: Antarctic ELF/VLF observations of lightning and lightning-induced electron precipitation
Morin, Paul	T-434-M	The Polar Geospatial Information Center: Joint support
Naveen, Ron	B-044-E	Collaborative Research: Multispecies, multi-scale investigations of long-term changes in penguin and seabird populations on the Antarctic Peninsula
Pettit, Joseph R	T-295-M	UNAVCO GPS survey support
Powell, Ross	C-522-M	Integrative study of marine ice sheet stability and subglacial life habitats - Robotic Access to Grounding-zones for Exploration and Science (RAGES)
Priscu, John	C-523-M	GeomicroBiology of Antarctic Subglacial Environments (GBASE) beneath the Mercer and Whillans ice streams
Priscu, John	B-505-M	McMurdo LTER - Lakes: Increased connectivity in a polar desert resulting from climate warming: McMurdo Dry Valley LTER Program
Pryke, Clement	A-149-S	Collaborative Research: BICEP2 and SPUD - A search for inflation with degree-scale polarimetry from the South Pole
Rack, Frank	C-524-M	WISSARD borehole drill contractor
Rotella, Jay	B-009-M	The demographic consequences of environmental variability and individual heterogeneity in life-history tactics of a long-lived

		Antarctic marine predator
Scambos, Theodore	**C-514-E**	Collaborative Research in IPY: Abrupt Environmental Change in the Larsen Ice Shelf System, a Multi-disciplinary Approach -- Cryosphere and Oceans (LARISSA)
Severinghaus, Jeffrey	**I-476-M**	Collaborative Research: Replicate coring at WAIS Divide to obtain additional samples at events of high scientific interest
Sprintall, Janet	**O-260-L**	The Drake Passage high-density XBT/XCTD program
Staudigel, Hubert	**G-439-M**	Collaborative research: Microbially mediated alteration of volcanic glass using McMurdo extreme environments as natural laboratories
Steinberg, Deborah	**B-020-L/P**	Palmer Long Term Ecological Research (LTER): Looking back in time through marine ecosystem space, zooplankton component
Stepp, Bill	**A-145-M**	NASA Long Duration Balloon (LDB) support program
Sweeney, Colm	**O-214-L**	Collaborative research: Biogeochemical controls of the oxygen and carbon system in the Drake Passage
Szuberla, Curt	**T-396-M**	Installation of a CTBT class infrasound station
Taylor, Kendrick	**I-477-M**	WAIS Divide Science Coordination Office (SCO)
Thoman, Bruce	**T-927-M**	NASA/McMurdo Ground Station (MG1)
Wall, Diana	**B-507-M**	McMurdo LTER - Soils: Increased connectivity in a polar desert resulting from climate warming: McMurdo Dry Valley LTER Program
Warburton, Janet	**Y-606-M**	PolarTREC
Watters, George	**B-006-N**	NOAA/AMLR Cruise
Weatherwax, Allan T	**A-111-M/S**	Studies of the polar Ionosphere

		and Magnetosphere from measurements in Antarctica
Weatherwax, Allan T	A-112-M	Polar experiment network for geospace upper-atmosphere investigations: PENGUIn - A high-latitude window to geospace dynamics
Wilson, Terry	G-079-M	Collaborative research, IPY POLENET-Antarctica: Investigating links between geodynamics and ice sheets
Wu, Qian	A-132-P	Thermospheric neutral wind observation in the Antarctica Peninsula
Yuan, Xiaojun	O-261-N	Collaborative Research: Sampling the ocean - sea ice interaction in the Pacific center of the Antarctic Dipole

Return to Index

Station Schedules 2012-2013

The United States Antarctic Program operates three permanent research stations on the continent and two research vessels.

	Austral Summer Season Openings		Austral Winter Season Openings
	Operational	Science	
McMurdo	20 Aug 2012 (Winfly*)	1 Oct 2012 (Mainbody)	28 Feb 2013
South Pole	26 Oct 2012	1 Nov 2012	15 Feb 2013
Palmer	18 Sep 2012	18 Sep 2012	N/A
Research Vessels	Year-round operations Vessel schedules on the Internet: http://www.usap.gov/vesselScienceAndOperations/		

*A limited number of science projects deploy at Winfly

	Estimated Population	
	Summer	Winter
McMurdo	940 (weekly average) 2,300 (total)	180 (winter total)
South Pole	150 (weekly average) 450 (total)	45 (winter total)
Palmer	36-44 (weekly average) 196 (total)	
RV/IB NBP*	39 science and staff / 25 crew	
ARSV LMG**	38 science and staff / 25 crew	

*RV/IB, Research Vessel/Icebreaker

**ARSV, Antarctic Research Support Vessel

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Air Operations 2012-2013

McMurdo Station

McMurdo-based aircraft (Helicopters, Twin Otter, Basler and LC-130 fixed-wing aircraft) will continue to support USAP researchers and program logistical functions.

PHI

PHI will provide helicopter support with five helicopters (two AS-350-B2 "A-Stars" and three Bell 212s) based out of McMurdo Station and Pine Island Glacier (PIG) camp. From the beginning of October to the beginning of December the five helicopters will support research in the McMurdo Dry Valleys, Royal Society Range and on Ross Island. From the beginning of December through the end of January two AS-350-B2's will be stationed at PIG; leaving the 3 Bell 212's in McMurdo to support the local region. In addition, Antarctic New Zealand will be providing a Eurocopter - EC130 from approximately the beginning of November through mid February.

http://www.phihelico.com/

New York Air National Guard (ANG)

The New York Air National Guard will provide re-supply and research support to South Pole Station. They will support research activities at deep field locations including Siple Dome, WAIS Divide, Byrd Station, PIG, and various open field landing locations.

http://www-105aw.ang.af.mil/

Kenn Borek Air

Twin Otter and Basler aircraft, operated by Kenn Borek Air, will be used by a number of projects throughout the USAP area of operations.

http://www.borekair.com/

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

USAP Field Camps 2012-2013

Staffed Field Camps

A total of ten field camps will have resident staff to provide logistical and operational assistance to McMurdo-based researchers.

Dry Valleys	77°30 S, 162° E 50 nautical miles from McMurdo Station

Each year, Long Term Ecological Research (LTER) grantees and other groups conduct research throughout the Dry Valleys. Two resident staff will operate the main base camp at Lake Hoare and the semi-permanent camps at Lake Fryxell, F-6, and Lake Bonney. Science project teams will erect their own small tent camps in the Garwood, Meirs, and McKelvey, Wright, and University Valleys.

Marble Point	77°41 S, 163°67 E 46 nautical miles from McMurdo Station

This camp supports refueling operations for helicopters working in the Dry Valleys and on local sea ice. Two resident staff and rotating fuels operators will operate the camp. Fuel and equipment will be delivered by traverse from McMurdo.

Siple Dome	81°39 S, 149°04 W 507 nautical miles from McMurdo Station

This camp serves as a fueling point for aircraft operating between McMurdo and West Antarctica or South Pole. Two resident staff will provide daily weather observations and maintain the camp. One science group will conduct work at Siple Dome this season: (I-172-M/Taleghader,). Siple will also house and feed Kenn Borek Air crews as needed.

WAIS Divide Field Camp	79°46 S, 112°08 W 924 nautical miles from McMurdo Station

The West Antarctic Ice Sheet (WAIS) Divide field camp with 16 resident staff will support six science projects: Taylor (I-477-M) and Severinghaus (I-476-M) will continue replicate coring of the WSD borehole. Charles Bentley with the Ice Drilling Design and Operations team (T-350-M) will continue to operate the DISC Drill. Relocating from Byrd to WAIS this season will be POLENET (G-079-M/Wilson) who will continue installation, service, and removal of their GPS and seismic array throughout West Antarctica; and Lazzara (O-283-M) who will service the automatic weather station (AWS) in the vicinity. John Stone (I-414-M) may also utilize WAIS as logistical hub for their work near the Whitmore Mountains, essentially reconnaissance for future subglacial bedrock sampling.

	80° S by 120° W

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Byrd Surface Camp	803 nm from McMurdo Station, and 97 nm from WAIS Divide

This camp is the hub for the Pine Island Glacier (PIG) Traverse (R-762-M) whose mission is to supply fuel, vehicles, and cargo to the PIG camp. Three resident staff members support the camp. Aside from being a fuel divert stop for LC-130 missions going to/from PIG, Byrd will also support one science group. The GIMBLE project (Young G-099-M) will complete a 16-flight aerogeophysical survey of Marie Byrd Land collecting gravity, magnetics and radar data.

Pine Island Glacier (PIG) Camp	-75.80° S by 100.28° E 440 nm west from Byrd Surface Camp

With a resident staff of eight and a peak camp population of forty, this camp will be support Bindschadler (C-407-M). The camp is the staging area for two A-STAR helicopters that will move science equipment, support infrastructure, and scientists to a highly-crevassed location ~45 nautical miles from the main camp. At this remote location, scientists will drill through 600 meters of ice to install instrumentation that measures ocean-ice interface to better understand the contributions to sea level rise. Drilling will occur at three separate sites over the course of two seasons. Helicopters will move scientists around the areas adjacent to the drill sites to gather data about the cavity beneath the ice shelf through seismic imaging.

Lower Erebus Hut (LEH)	77.31° S, 167.82° E 35nm from McMurdo Station

This camp serves field teams going to Mt. Erebus. One resident staff will be stationed here to assist with population, infrastructure management, helicopter scheduling-081 MEVO III (Mount Erebus Volcano Observatory.) This year Staudigal (G-439-M) will study microbial mediation of volcanic glass.

Subglacial Lake Whillans	84.14° S, 153.41° W 600nm from McMurdo Station

After testing near William's field, the WISSARD drilling equipment will be traversed to Subglacial Lake Whillans where a field camp will be established for up to two weeks of drilling and science activities. Test and field science activities will include melting a borehole to support multiple field instruments for collecting water, sediment, and ice samples. Some infrastructure will remain in the field over winter; however, the main crew and tractors will return to McMurdo late February and depart on the last flight north. Dedicated staff includes five traverse team, two marine technicians, one project coordinator, one camp operator/fuelie, a camp manager and a medical technician.

Pine Island Glacier (PIG) Traverse	Operating in vicinity of Byrd Surface Camp, WAIS Divide Field Camp, and PIG Camp

Six staff will conduct two separate traverses. Traverse A will travel from Byrd Surface Camp to Pine Island Glacier moving equipment and fuel to support the helicopter/fixed wing camp based there. Traverse B will bring fuel and cargo from

Byrd to WAIS in support of the POLENET/Wilson (G-079-M) relocation. The second traverse will also complete vehicle and structure overhauls in preparation for next year's traverse work.

Groom Team

82.00° S, 96.79° E

487-1090nm from McMurdo Station

Early in the season, this three contract staff will groom a ski landing area at the location of the previous CTAM helicopter camp. This landing area will assist larger aircraft with the depot of fuel and cargo in support of the groups working in the area: Conway (I-210-M, Harvey (G-057 and G-058). They will then move on to groom landing areas at the AGO sites in support of Weatherwax (A-112-M), enabling reach locations renowned for rough landing topography and allow the team to retrieve gear that was left at the sites in previous seasons.

Science Event Numbering System 2012-2013

Every project is assigned a unique event number.
The first letter indicates the USAP program funding a project:

Prefix	USAP Program
A	Astrophysics and Geospace Sciences
B	Organisms and Ecosystems
C	Integrated System Science
G	Earth Sciences
I	Glaciology
O	Oceans and Atmospheric Sciences
W	Artists and Writers
Y	Education and Outreach
T	Technical Event

The suffix represents the supporting station. If field work takes place at more than one location the event number carries more than one suffix separated by a slash.

Suffix	Supporting Station (link to index)
M	McMurdo Station
P	Palmer Station
S	South Pole Station
L	ARSV Laurence M. Gould
N	RV/IB Nathaniel B. Palmer
E	Special projects supported by the USAP. Examples include investigators working with other national Antarctic programs.

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Science Program Indexes 2012-2013

Principal Investigator Index

Return to Index

Principal Investigator	Event No.	Project Title
Ainley, David	B-031-M	Adelie Penguin response to climate change at the individual, colony and metapopulation levels
Ainley, David	B-042-M	COLLABORATIVE RESEARCH: Penguin foraging reveals phytoplankton spatial structure in the Ross Sea
Allen, Andrew	B-394-M	Synergistic effects of iron, carbon dioxide and temperature on the fate of nitrate: Implications for future changes in export production in the Southern Ocean
Amaral Zettler, Linda Angela	B-228-P	Collaborative Research: Microbial Community Assembly in Coastal Waters of the Western Antarctic Peninsula
Anderson, Kent	G-090-P/S	Global seismograph station at South Pole and Palmer Station
Anderson, Kent	G-090-P/S	Global seismograph station at South Pole and Palmer Stations
Barbeau, David L.	G-432-E	COLLABORATIVE RESEARCH: EAGER: Evaluating the suitability of the Larsen basin for testing the Cretaceous glaciation hypothesis
Barwick, Steven	A-127-M	Development of hexagonal radio array for the ARIANNA ultra-high energy neutrino detector
Bench, Shelley R	B-018-P	PostDoctoral Research Fellowship
Bentley, Charles	T-350-M	Ice Coring and Drilling Services (ICDS) support for WAIS Divide
Bieber, John	A-120-M	Cosmic ray observations at McMurdo Station
Bindschadler, Robert	C-407-M	IPY: Collaborative Research: Ocean-ice sheet interaction in the

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

		Amundsen Sea: The keystone of West Antarctic stability
Blankenship, Donald	G-098-M	International cryospheric exploration through collaborative aerogeophysical profiling/Operation Ice Bridge (OIB)
Bockheim, James	G-239-P	Impact of recent climate warming on active-layer dynamics, permafrost, and soil properties on the western Antarctic Peninsula
Bristow, William	A-369-M/S	McMurdo and South Pole SuperDARN: Investigation of the ionospheric dynamics and magnetosphere-ionosphere coupling in Antarctica
Buckley, Bradley	B-308-M	The cellular stress response in cold-adapted organisms: Building novel mechanistic links between heat stress, cell cycle arrest and apoptosis in Antarctic fishes.
Carlstrom, John	A-379-S	Cosmological Research with the 10-meter South Pole Telescope
Carpenter, Paul	T-299-M	IRIS/PASSCAL seismic support
Cassano, John	O-240-M	Collaborative Research: Ocean-ice-atmosphere interactions in the Terra Nova Bay polynya
Cassar, Nicolas	O-405-L	Physiological and ecosystem structure forcings on carbon fluxes in the Southern Ocean mixed layer
Cheng, Chi-Hing Christina	B-010-L/M/P	Antarctic notothenioid fish freeze avoidance and genome-wide evolution for life in the cold
Chereskin, Teresa	O-317-L/N	Collaborative research: Southern Ocean current observations from the U.S. Antarctic research vessels
Chu, Xinzhao	A-130-M	Lidar Investigation of middle and upper atmosphere temperature, composition, chemistry, and dynamics at McMurdo, Antarctica
Clark, Peter U.	I-311-M	Collaborative Research: Dating and modeling the last deglaciation of the Ross Sea sector of the West Antarctic Ice Sheet

Clauer, C. Robert	A-106-M/S	Collaborative Research: Polar Experiment Network for Geospace Upper-atmosphere Investigations: Interhemispheric investigations along the 40-degree magnetic meridian
Comberiate, Mike	T-966-M	TDRSS and NAILS
Conway, Howard	I-209-M	Deglaciation of the Ross Sea Embayment - constraints from Roosevelt Island
Conway, Howard	I-210-M	East Antarctic outlet glacier dynamics
Corbett, David	O-176-L/P	Submarine groundwater and freshwater inputs along the Western Antarctic Peninsula
Costa, Daniel	B-232-M	Collaborative Research: Weddell seals as autonomous sensors of the winter oceanography of the Ross Sea
Cottle, John	G-064-M	Exploring the significance of NA-alkaline magmatism in subduction systems, a case study from the Ross Orogen
Crocker, Brian Christopher	T-500-M	T-500-O
Devlin, Mark	A-147-M	Balloon-borne Large Aperture Sub-millimeter Telescope (BLAST-POL)
Dolk, Shaun R	X-592-E	NOAA's Global Drifter Program (GDP)
Domack, Eugene	C-515-E/L	LARISSA Project participation RVIB Araon Cruise in 2013
Domack, Eugene	C-515-E/L	Continuation of the LARISSA continuous GPS network in view of observed dynamic response to Antarctic Peninsula mass balance and required geologic constraints
Doran, Peter	B-511-M	McMurdo LTER - Lakes: Increased connectivity in a polar desert resulting from climate warming: McMurdo Dry Valley LTER Program
Ducklow, Hugh William	B-252-P	The seasonal cycle of export production in an Antarctic coastal marine ecosystem

Ducklow, Hugh William	B-045-L/P	Palmer Long Term Ecological Research (LTER): Looking back in time through marine ecosystem space, microbial ecology component
Durbin, Edward G	B-014-N	Euphausia superba feeding using DNA analysis of gut contents
Emerson, Steven R	O-254-L	Noble gases in the Drake Passage aboard the ARSV Laurence M. Gould
Engebretson, Mark J	A-102-M/S	Studies of solar wind - Magnetosphere interactions using observations of ULF waves at an extensive ground array at high latitudes
Evenson, Paul	A-118-S	Element composition of high-energy solar particles
Firing, Eric	O-317-L/N	Collaborative research: Southern Ocean current observations from the U.S. Antarctic research vessels
Fountain, Andrew	B-504-M	McMurdo LTER - Glaciers: Increased connectivity in a polar desert resulting from climate warming: McMurdo Dry Valleys LTER Program
Fraser, Bill	B-013-L/P	Palmer Long Term Ecological Research (LTER): Looking back in time through marine ecosystem space, apex predator component
Friedlaender, Ari Seth	B-206-E	RAPID: Linking the movement patterns and foraging behavior of humpback whales to their prey across multiple spatial scales within the LTER study region
Gill, John T	A-336-P	ELF/VLF observation of whistler-mode waves, lightning discharge, and gamma-ray events from Palmer Station
Halzen, Francis	A-333-S	IceCube operations and maintenance
Hanany, Shaul	A-146-M	E & B Experiment (EBEX)
Hansell, Dennis Arthur	O-309-N	Collaborative Research: TRacing the fate of Algal Carbon Export in

		the Ross Sea (TRACERS)
Hansen, Samantha	G-061-M	CAREER: Deciphering the tectonic history of the Transantarctic Mountains and the Wilkes Subglacial Basin
Harvey, Ralph	G-058-M	Antarctic Search for Meteorites (ANSMET)
Harvey, Ralph	G-057-M	The Antarctic Search for Meteorites (ANSMET): Reconnaissance team
Helmig, Detlev	O-233-M	Reactive gas chemistry in the Dome C snowpack and its influence on surface-layer chemistry and ice-core records
Hernandez, Gonzalo	A-110-M/S	Austral high-latitude atmospheric dynamics
Hofmann, Gretchen	B-134-M	Ocean acidification: Integrated approaches to understanding effects on antarctic sea urchins, Sterechinus neumayeri
Holland, David	O-286-M	Collaborative Research: Application of distributed temperature sensors (DTS) for Antarctic ice shelves and cavities
Hosticka, Bouvard NMI	T-998-P	Operation and maintenance of a CTBT radionuclide monitoring station at Palmer Station
Kalnajs, Lars E	O-324-M	Augmenting the Ross Island-area automatic weather station network to develop a tropospheric ozone climatology
Karle, Albrecht	A-107-S	Collaborative Research: MRI-R2 instrument development of the Askaryan Radio Array, a large-scale radio Cherenkov neutrino detector at the South Pole
Kemerait, Robert	G-078-M	Dry Valley seismic project
Kennicutt, Mahlon	B-518-M	Temporal variability in natural and anthropogenic disturbance of McMurdo Station
Kim, Stacy	B-174-M	Benthic-pelagic coupling in an intact ecosystem: The role of top predators in McMurdo Sound

Koch, Paul	B-225-M	Exploring the vulnerability of Southern Ocean pinnipeds to climate change - an integrated approach
Kooyman, Gerald	B-464-N	Pre- and post-molt biology of emperor penguins
Kovac, John	A-039-S	Collaborative Research: BICEP2 and SPUD - A search for inflation with degree-scale polarimetry from the South Pole
Kulesa, Craig	A-364-S	High Elevation Antarctic Terahertz (HEAT) telescopes for Dome A and Ridge A
LaBelle, James	A-128-S	Outstanding Questions on Auroral Radiation Fine Structure
LaBelle, James	A-125-S	Application of the AGO network to energy transfer in the radiation belts and remote sensing of auroral plasma processes
Lamanna, Matthew	G-182-E	Late Cretaceous-Paleogene vertebrates from Antarctica: Implications for paleobiogeography, paleoenvironment, and extinction in Polar Gondwana
Lazzara, Matt	O-283-M	Antarctic Automatic Weather Station (AWS) program
Ledwell, James Robert	O-124-L	Studies of turbulence and mixing in the Antarctic Circumpolar Current, a continuation of DIMES
Leonard, Katherine Colby	O-242-E	Role of snow distribution processes in Antarctic sea ice mass balance
Levy, Joseph	G-084-M	Cryptic hydrology of the McMurdo Dry Valleys: Water track contributions to water and geochemical budgets in Taylor Valley, Antarctica
Levy, Joseph	G-080-M	Rapid landscape change in Garwood Valley: Monitoring buried glacier melt and exploring “Péwé’s Lost Lake”
Lubin, Dan	O-314-M	Antarctic Cloud Physics: Fundamental Observations from Ross Island

Lyons, W. Berry	B-509-M	McMurdo LTER - Geochemistry: Increased connectivity in a polar desert resulting from climate warming: McMurdo Dry Valley LTER Program
Marchant, David R	G-054-M	Quantifying surface processes above buried ice in Antarctica: Implications for terrestrial climate change and glaciation on Mars
Martinson, Doug	B-021-L	Palmer Long Term Ecological Research (LTER): Looking back in time through marine ecosystem space, physical oceanography component
Mayewski, Paul	I-173-M	Roosevelt Island Climate Evolution (RICE) project
McClintock, James	B-027-P	The effects of ocean acidification and rising sea surface temperatures on shallow-water benthic organisms in Antarctica
McKay, Christopher	B-302-M	IceBite: An auger and sampling systems for ground ice on Mars
McKnight, Diane	B-506-M	McMurdo LTER - Streams: Increased connectivity in a polar desert resulting from climate warming: McMurdo Dry Valley LTER Program
Melendy, Renee	T-940-M	CRREL 09-10 activities
Mellish, Jo-Ann	B-470-M	Collaborative Research: Thermoregulation in free-living Antarctic seals: the missing link in effective ecological modeling
Miller, Scott	O-278-N	Air-sea fluxes of momentum, heat, and carbon dioxide at high wind speeds in the Southern Ocean
Min, Larissa	W-491-M	Wondering Gondwana
Mitchell, John	A-142-M	Super Trans-Iron Galactic Element Recorder (SuperTIGER)
Moore, Anna	A-356-S	Analysis of the data from the Gattini Antarctic camera network
Moore, Robert C	A-109-M/P/S	Collaborative Research: Antarctic ELF/VLF observations of lightning and lightning-induced electron

		precipitation
Morel, Francois M	B-003-P	Collaborative Research: The seasonal dynamics of CO2, primary production, and DMS in the Western Antarctic Peninsula - Measurements of pools and processes using mass spectrometry
Morgan-Kiss, Rachael	B-247-M	CAREER: Protist diversity and function in the dry valley lakes
Morin, Paul	T-434-M	The Polar Geospatial Information Center: Joint support
Naveen, Ron	B-044-E	Collaborative Research: Multispecies, multi-scale investigations of long-term changes in penguin and seabird populations on the Antarctic Peninsula
O'Brien, Kristin M.	B-036-L/P	Redox balance in Antarctic notothenioid fishes: Do icefishes have an advantage?
Obbard, Rachel W	O-263-M	Bromide in snow in the sea ice zone
Pettit, Joseph R	T-295-M	UNAVCO GPS survey support
Place, Sean	B-199-M	Ocean acidification–category 1: Identifying adaptive responses of polar fishes in a vulnerable ecosystem
Ponganis, Paul	B-197-M	The physiological ecology of two Antarctic icons: Emperor penguins and leopard seals
Postlethwait, John Harvey	B-029-L/P	Developmental Mechanisms for the Evolution of Bone Loss
Powell, Ross	C-522-M	Integrative study of marine ice sheet stability and subglacial life habitats - Robotic Access to Grounding-zones for Exploration and Science (RAGES)
Priscu, John	C-523-M	GeomicroBiology of Antarctic Subglacial Environments (GBASE) beneath the Mercer and Whillans ice streams
Priscu, John	B-505-M	McMurdo LTER - Lakes: Increased connectivity in a polar desert resulting from climate warming:

		McMurdo Dry Valley LTER Program
Pryke, Clement	A-149-S	Collaborative Research: BICEP2 and SPUD - A search for inflation with degree-scale polarimetry from the South Pole
Rack, Frank	C-524-M	WISSARD borehole drill contractor
Romalis, Michael V	A-103-S	Test of Lorentz invariance at the South Pole
Rotella, Jay	B-009-M	The demographic consequences of environmental variability and individual heterogeneity in life-history tactics of a long-lived Antarctic marine predator
Scambos, Theodore	C-514-E	Collaborative Research in IPY: Abrupt Environmental Change in the Larsen Ice Shelf System, a Multi-disciplinary Approach -- Cryosphere and Oceans (LARISSA)
Schmidt, Britney Elyce	B-259-M	Astrobiology Science and Technology for Exploring Planets
Schofield, Oscar	B-019-L/P	Palmer Long Term Ecological Research (LTER): Looking back in time through marine ecosystem space, phytoplankton component
Schwartz, Susan	C-525-M	Investigating (un)stable sliding of Whillians Ice Stream and subglacial water dynamics using borehole seismology: A component of the Whillans Ice Stream Subglacial Access Research Drilling (WISSARD) Project
Severinghaus, Jeffrey	I-476-M	Collaborative Research: Replicate coring at WAIS Divide to obtain additional samples at events of high scientific interest
Sims, Kenneth W	G-092-M	A geochemical study of the nature and evolution of mantle upwelling beneath Ross Island and its relationship to tectonics in the West Antarctic Rift System
Sprintall, Janet	O-260-L	The Drake Passage high-density XBT/XCTD program
Staudigel, Hubert	G-439-M	Collaborative research: Microbially

		mediated alteration of volcanic glass using McMurdo extreme environments as natural laboratories
Stearns, Leigh	I-351-M	Collaborative Research: Byrd Glacier flow dynamics
Steinberg, Deborah	B-020-L/P	Palmer Long Term Ecological Research (LTER): Looking back in time through marine ecosystem space, zooplankton component
Stepp, Bill	A-145-M	NASA Long Duration Balloon (LDB) support program
Stone, John	I-414-M	Glacial-interglacial history of West Antarctic nunataks and site reconnaissance for subglacial bedrock sampling
Sweeney, Colm	O-214-L	Collaborative research: Biogeochemical controls of the oxygen and carbon system in the Drake Passage
Szuberla, Curt	T-396-M	Installation of a CTBT class infrasound station
Takacs-Vesbach, Cristina	B-330-M	An integrated ecological investigation of McMurdo Dry Valley's active soil microbial communities
Taylor, Edith	G-496-M	Life in a volcanic landscape: Early Jurassic paleoenvironments and paleobotany
Taylor, Kendrick	I-477-M	WAIS Divide Science Coordination Office (SCO)
Thoman, Bruce	T-927-M	NASA/McMurdo Ground Station (MG1)
Thurber, Andrew	B-004-M	Microbe-metazoan interactions in an Antarctic infaunal community
Tuft, Diane	W-493-M	The hidden light of Antarctica
Wall, Diana	B-507-M	McMurdo LTER - Soils: Increased connectivity in a polar desert resulting from climate warming: McMurdo Dry Valley LTER Program
Warburton, Janet	Y-606-M	PolarTREC
Warren, Stephen	O-201-E	Spectral and broadband albedo of

		Antarctic sea-ice types
Watters, George	B-006-N	NOAA/AMLR Cruise
Weatherwax, Allan T	A-111-M/S	Studies of the polar Ionosphere and Magnetosphere from measurements in Antarctica
Weatherwax, Allan T	A-112-M	Polar experiment network for geospace upper-atmosphere investigations: PENGUIn - A high-latitude window to geospace dynamics
Wiens, Douglas	G-089-M/S	Polenet East: An international seismological network for East Antarctica
Wilson, Terry	G-079-M	Collaborative research, IPY POLENET-Antarctica: Investigating links between geodynamics and ice sheets
Wu, Qian	A-132-P	Thermospheric neutral wind observation in the Antarctica Peninsula
Young, Duncan A	G-099-M	Geophysical Investigation of Marie Byrd Land Lithospheric Evolution -- GIMBLE
Yuan, Xiaojun	O-261-N	Collaborative Research: Sampling the ocean - sea ice interaction in the Pacific center of the Antarctic Dipole

Return to Index

Science Program Indexes 2012-2013

Institution Index

Return to Index

Institution	Event No.	Principal Investigator
Alabama Birmingham, University of	B-027-P	McClintock, James
Alabama Tuscaloosa, University of	G-061-M	Hansen, Samantha
Alaska Fairbanks, University of	B-036-L/P	O'Brien, Kristin
Alaska Fairbanks, University of	T-396-M	Szuberla, Curt
Alaska Fairbanks, University of	B-470-M	Mellish, Jo-Ann
Alaska Fairbanks, University of	A-369-M/S	Bristow, William
Arctic Research Consortium	Y-606-M	Warburton, Janet
Arizona Tucson, University of	A-364-S	Kulesa, Craig
Augsburg College	A-102-M/S	Engebretson, Mark
Boston University	G-054-M	Marchant, David
California Institute of Technology	A-356-S	Moore, Anna
California Irvine, University of	A-127-M	Barwick, Steven
California San Diego, University of	O-317-L/N	Chereskin, Teresa
California Santa Barbara, University of	B-134-M	Hofmann, Gretchen
California Santa Barbara, University of	G-064-M	Cottle, John
California Santa Cruz, University of	C-525-M	Schwartz, Susan
California Santa Cruz, University of	B-225-M	Koch, Paul
California Santa Cruz, University of	B-232-M	Costa, Daniel
Case Western Reserve University	G-057-M	Harvey, Ralph
Case Western Reserve University	G-058-M	Harvey, Ralph
Chicago, University of	A-379-S	Carlstrom, John
Chicago, University of	A-149-S	Pryke, Clement
Colorado Boulder, University of	A-130-M	Chu, Xinzhao
Colorado Boulder, University of	C-514-E	Scambos, Theodore

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Colorado Boulder, University of	B-506-M	McKnight, Diane
Colorado Boulder, University of	O-240-M	Cassano, John
Colorado Boulder, University of	O-233-M	Helmig, Detlev
Colorado Boulder, University of	O-242-E	Leonard, Katherine
Colorado Boulder, University of	O-324-M	Kalnajs, Lars
Colorado State University	B-507-M	Wall, Diana
Columbia Scientific Balloon Facility	A-145-M	Stepp, Bill
Columbia University	B-021-L	Martinson, Doug
Columbia University	B-045-L/P	Ducklow, Hugh
Columbia University	O-261-N	Yuan, Xiaojun
Columbia University	B-252-P	Ducklow, Hugh
Dartmouth College	A-125-S	LaBelle, James
Dartmouth College	O-263-M	Obbard, Rachel
Dartmouth College	A-128-S	LaBelle, James
Delaware, University of	A-118-S	Evenson, Paul
Delaware, University of	A-120-M	Bieber, John
Desert Research Institute	I-477-M	Taylor, Kendrick
Duke University	B-206-E	Friedlaender, Ari
Duke University	O-405-L	Cassar, Nicolas
East Carolina University	O-176-L/P	Corbett, David
Florida, University of	A-109-M/P/S	Moore, Robert
H.T. Harvey & Associates	B-031-M	Ainley, David
H.T. Harvey & Associates	B-042-M	Ainley, David
Hamilton College	C-515-E/L	Domack, Eugene
Hamilton College	C-515-E/L	Domack, Eugene
Harvard University	A-039-S	Kovac, John
Hawaii Manoa, University of	O-317-L/N	Firing, Eric
Illinois Chicago, University of	B-511-M	Doran, Peter
Illinois Urbana, University of	B-010-L/M/P	Cheng, Chi-Hing Christina

J. Craig Venter Institute	B-394-M	Allen, Andrew
Kansas Lawrence, University of	G-496-M	Taylor, Edith
Kansas Lawrence, University of	I-351-M	Stearns, Leigh
Maine, University of	I-173-M	Mayewski, Paul
Marine Biological Laboratory (MBL)	B-228-P	Amaral Zettler, Linda
Miami University	B-247-M	Morgan-Kiss, Rachael
Miami, University of	O-309-N	Hansell, Dennis
Minnesota, University of	A-146-M	Hanany, Shaul
Minnesota, University of	T-434-M	Morin, Paul
Montana State University Bozeman	B-009-M	Rotella, Jay
Montana State University Bozeman	B-505-M	Priscu, John
Montana State University Bozeman	C-523-M	Priscu, John
National Aeronautics and Space Administration	A-142-M	Mitchell, John
National Aeronautics and Space Administration	T-966-M	Comberiate, Mike
National Aeronautics and Space Administration	T-927-M	Thoman, Bruce
National Aeronautics and Space Administration	B-302-M	McKay, Christopher
National Aeronautics and Space Administration	C-407-M	Bindschadler, Robert
National Oceanic and Atmospheric Administration	X-592-E	Dolk, Shaun
National Oceanic and Atmospheric Administration	B-006-N	Watters, George
National Oceanic and Atmospheric Administration	O-214-L	Sweeney, Colm
Nebraska Lincoln, University of	C-524-M	Rack, Frank
New Mexico Institute of Mining and Technology	T-299-M	Carpenter, Paul
New Mexico, University of	B-330-M	Takacs-Vesbach, Cristina
Northern Illinois University	C-522-M	Powell, Ross
Oceanites, Inc.	B-044-E	Naveen, Ron

Ohio State University	G-079-M	Wilson, Terry
Ohio State University	B-509-M	Lyons, W. Berry
Oregon State University	B-004-M	Thurber, Andrew
Oregon State University	I-311-M	Clark, Peter
Oregon, University of	B-029-L/P	Postlethwait, John
Pennsylvania, University of	A-147-M	Devlin, Mark
Polar Oceans Research Group	B-013-L/P	Fraser, Bill
Portland State University	B-308-M	Buckley, Bradley
Portland State University	B-504-M	Fountain, Andrew
Princeton University	B-003-P	Morel, Francois
Princeton University	A-103-S	Romalis, Michael
Rhode Island, University of	B-014-N	Durbin, Edward
Rutgers University	B-019-L/P	Schofield, Oscar
San Jose State University	B-174-M	Kim, Stacy
Scripps Institution of Oceanography	B-464-N	Kooyman, Gerald
Scripps Institution of Oceanography	I-476-M	Severinghaus, Jeffrey
Scripps Institution of Oceanography	O-314-M	Lubin, Dan
Scripps Institution of Oceanography	G-439-M	Staudigel, Hubert
Scripps Institution of Oceanography	O-260-L	Sprintall, Janet
Scripps Institution of Oceanography	B-197-M	Ponganis, Paul
Siena College	A-112-M	Weatherwax, Allan
Siena College	A-111-M/S	Weatherwax, Allan
South Carolina, University of	B-199-M	Place, Sean
South Carolina, University of	G-432-E	Barbeau, David
Stanford University	B-018-P	Bench, Shelley
Stanford University	A-336-P	Gill, John
Texas A & M University	B-518-M	Kennicutt, Mahlon
Texas Austin, University of	G-080-M	Levy, Joseph
Texas Austin, University of	G-099-M	Young, Duncan
Texas Austin, University of	B-259-M	Schmidt, Britney
Texas Austin, University of	G-098-M	Blankenship, Donald

Texas Austin, University of	G-084-M	Levy, Joseph
UNAVCO	T-295-M	Pettit, Joseph
United States Air Force	G-078-M	Kemerait, Robert
United States Geological Survey	G-090-P/S	Anderson, Kent
United States Geological Survey	G-090-P/S	Anderson, Kent
University at Albany	O-278-N	Miller, Scott
University Corporation for Atmospheric Research, UCAR/NCAR	A-132-P	Wu, Qian
US Army Cold Regions Research & Engineering Lab	T-940-M	Melendy, Renee
Virginia Institute of Marine Sciences	B-020-L/P	Steinberg, Deborah
Virginia Tech	A-106-M/S	Clauer, C.
Virginia, University of	T-998-P	Hosticka, Bouvard
Washington University	G-089-M/S	Wiens, Douglas
Washington, University of	I-209-M	Conway, Howard
Washington, University of	A-110-M/S	Hernandez, Gonzalo
Washington, University of	I-414-M	Stone, John
Washington, University of	I-210-M	Conway, Howard
Washington, University of	O-201-E	Warren, Stephen
Washington, University of	O-254-L	Emerson, Steven
Wisconsin Madison, University of	T-350-M	Bentley, Charles
Wisconsin Madison, University of	A-333-S	Halzen, Francis
Wisconsin Madison, University of	G-239-P	Bockheim, James
Wisconsin Madison, University of	O-283-M	Lazzara, Matt
Wisconsin Madison, University of	A-107-S	Karle, Albrecht
Woods Hole Oceanographic Institution	O-124-L	Ledwell, James
Wyoming, University of	G-092-M	Sims, Kenneth

Return to Index

Science Program Indexes 2012-2013

Event Number Index

Return to Index

Root No.	Event No.	Principal Investigator
003	B-003-P	Morel, Francois
004	B-004-M	Thurber, Andrew
006	B-006-N	Watters, George
009	B-009-M	Rotella, Jay
010	B-010-L/M/P	Cheng, Chi-Hing Christina
013	B-013-L/P	Fraser, Bill
014	B-014-N	Durbin, Edward
018	B-018-P	Bench, Shelley
019	B-019-L/P	Schofield, Oscar
020	B-020-L/P	Steinberg, Deborah
021	B-021-L	Martinson, Doug
027	B-027-P	McClintock, James
029	B-029-L/P	Postlethwait, John
031	B-031-M	Ainley, David
036	B-036-L/P	O'Brien, Kristin
039	A-039-S	Kovac, John
042	B-042-M	Ainley, David
044	B-044-E	Naveen, Ron
045	B-045-L/P	Ducklow, Hugh
054	G-054-M	Marchant, David
057	G-057-M	Harvey, Ralph
058	G-058-M	Harvey, Ralph
061	G-061-M	Hansen, Samantha
064	G-064-M	Cottle, John
078	G-078-M	Kemerait, Robert

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

079	G-079-M	Wilson, Terry
080	G-080-M	Levy, Joseph
084	G-084-M	Levy, Joseph
089	G-089-M/S	Wiens, Douglas
090	G-090-P/S	Anderson, Kent
090	G-090-P/S	Anderson, Kent
092	G-092-M	Sims, Kenneth
098	G-098-M	Blankenship, Donald
099	G-099-M	Young, Duncan
102	A-102-M/S	Engebretson, Mark
103	A-103-S	Romalis, Michael
106	A-106-M/S	Clauer, C.
107	A-107-S	Karle, Albrecht
109	A-109-M/P/S	Moore, Robert
110	A-110-M/S	Hernandez, Gonzalo
111	A-111-M/S	Weatherwax, Allan
112	A-112-M	Weatherwax, Allan
118	A-118-S	Evenson, Paul
120	A-120-M	Bieber, John
124	O-124-L	Ledwell, James
125	A-125-S	LaBelle, James
127	A-127-M	Barwick, Steven
128	A-128-S	LaBelle, James
130	A-130-M	Chu, Xinzhao
132	A-132-P	Wu, Qian
134	B-134-M	Hofmann, Gretchen
142	A-142-M	Mitchell, John
145	A-145-M	Stepp, Bill
146	A-146-M	Hanany, Shaul
147	A-147-M	Devlin, Mark
149	A-149-S	Pryke, Clement

173	I-173-M	Mayewski, Paul
174	B-174-M	Kim, Stacy
176	O-176-L/P	Corbett, David
182	G-182-E	Lamanna, Matthew
197	B-197-M	Ponganis, Paul
199	B-199-M	Place, Sean
201	O-201-E	Warren, Stephen
206	B-206-E	Friedlaender, Ari
209	I-209-M	Conway, Howard
210	I-210-M	Conway, Howard
214	O-214-L	Sweeney, Colm
225	B-225-M	Koch, Paul
228	B-228-P	Amaral Zettler, Linda
232	B-232-M	Costa, Daniel
233	O-233-M	Helmig, Detlev
239	G-239-P	Bockheim, James
240	O-240-M	Cassano, John
242	O-242-E	Leonard, Katherine
247	B-247-M	Morgan-Kiss, Rachael
252	B-252-P	Ducklow, Hugh
254	O-254-L	Emerson, Steven
259	B-259-M	Schmidt, Britney
260	O-260-L	Sprintall, Janet
261	O-261-N	Yuan, Xiaojun
263	O-263-M	Obbard, Rachel
278	O-278-N	Miller, Scott
283	O-283-M	Lazzara, Matt
286	O-286-M	Holland, David
295	T-295-M	Pettit, Joseph
299	T-299-M	Carpenter, Paul

302	B-302-M	McKay, Christopher
308	B-308-M	Buckley, Bradley
309	O-309-N	Hansell, Dennis
311	I-311-M	Clark, Peter
314	O-314-M	Lubin, Dan
317	O-317-L/N	Chereskin, Teresa
317	O-317-L/N	Firing, Eric
324	O-324-M	Kalnajs, Lars
330	B-330-M	Takacs-Vesbach, Cristina
333	A-333-S	Halzen, Francis
336	A-336-P	Gill, John
350	T-350-M	Bentley, Charles
351	I-351-M	Stearns, Leigh
356	A-356-S	Moore, Anna
364	A-364-S	Kulesa, Craig
369	A-369-M/S	Bristow, William
379	A-379-S	Carlstrom, John
394	B-394-M	Allen, Andrew
396	T-396-M	Szuberla, Curt
405	O-405-L	Cassar, Nicolas
407	C-407-M	Bindschadler, Robert
414	I-414-M	Stone, John
432	G-432-E	Barbeau, David
434	T-434-M	Morin, Paul
439	G-439-M	Staudigel, Hubert
464	B-464-N	Kooyman, Gerald
470	B-470-M	Mellish, Jo-Ann
476	I-476-M	Severinghaus, Jeffrey
477	I-477-M	Taylor, Kendrick
491	W-491-M	Min, Larissa
493	W-493-M	Tuft, Diane

496	G-496-M	Taylor, Edith
500	T-500-M	Crocker, Brian
504	B-504-M	Fountain, Andrew
505	B-505-M	Priscu, John
506	B-506-M	McKnight, Diane
507	B-507-M	Wall, Diana
509	B-509-M	Lyons, W. Berry
511	B-511-M	Doran, Peter
514	C-514-E	Scambos, Theodore
515	C-515-E/L	Domack, Eugene
515	C-515-E/L	Domack, Eugene
518	B-518-M	Kennicutt, Mahlon
522	C-522-M	Powell, Ross
523	C-523-M	Priscu, John
524	C-524-M	Rack, Frank
525	C-525-M	Schwartz, Susan
592	X-592-E	Dolk, Shaun
606	Y-606-M	Warburton, Janet
927	T-927-M	Thoman, Bruce
940	T-940-M	Melendy, Renee
966	T-966-M	Comberiate, Mike
998	T-998-P	Hosticka, Bouvard

Return to Index

Science Program Indexes 2012-2013

Technical Event Index

Return to Index

Principal Investigator	Event No.	Project Title
Bentley, Charles	T-350-M	Ice Coring and Drilling Services (ICDS) support for WAIS Divide
Carpenter, Paul	T-299-M	IRIS/PASSCAL seismic support
Comberiate, Mike	T-966-M	TDRSS and NAILS
Crocker, Brian	T-500-M	T-500-O
Hosticka, Bouvard	T-998-P	Operation and maintenance of a CTBT radionuclide monitoring station at Palmer Station
Melendy, Renee	T-940-M	CRREL 09-10 activities
Morin, Paul	T-434-M	The Polar Geospatial Information Center: Joint support
Pettit, Joseph	T-295-M	UNAVCO GPS survey support
Szuberla, Curt	T-396-M	Installation of a CTBT class infrasound station
Thoman, Bruce	T-927-M	NASA/McMurdo Ground Station (MG1)

Return to Index

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Science Program Indexes 2012-2013

Deploying Team Members Index

Return to Index

Team Members	Event No.	Principal Investigator
Aboobaker, Asad	A-146-M	Shaul Hanany
Achberger, Amanda	C-523-M	John Priscu
Adams, Byron	B-507-M	Diana Wall
Adkins, William Peyton	C-523-M	John Priscu
Aird, Ken	A-379-S	John Carlstrom
Alger, Russ	T-940-M	Renee Melendy
Amsler, Charles	B-027-P	James McClintock
Amsler, Margaret	B-027-P	James McClintock
Anandakrishnan, Sridhar	C-407-M	Robert Bindschadler
Angile, Francesco	A-147-M	Mark Devlin
Asher, Elizabeth	B-003-P	Francois M Morel
Ashley, Michael	A-364-S	Craig Kulesa
Asper, Vernon L	B-042-M	David Ainley
Aubin, Francois	A-146-M	Shaul Hanany
Auer, Ralf	A-333-S	Francis Halzen
Bacarella, Stephanie		Gregory Rouse
Baker, Bill		Gregory Rouse
Barcheck, Grace	C-525-M	Susan Schwartz
Barden, Allison	B-199-M	Sean Place
Barlow, Stephen	A-110-M/S	Gonzalo Hernandez
Barna, Lynette	T-940-M	Renee Melendy
Barnet, Steven	A-333-S	Francis Halzen
Barrett, John	B-507-M	Diana Wall
Basagic, Hassan	B-504-M	Andrew Fountain
Bauer, Robert James	C-515-E/L	Eugene Domack

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Beange, Alexander	A-145-M	Bill Stepp
Beaudette, Ross Andrew	I-476-M	Jeffrey Severinghaus
Beck, Andrew	G-058-M	Ralph Harvey
Beers, Tom	I-173-M	Paul Mayewski
Behar, Alberto	C-407-M	Robert Bindschadler
Behar, Alberto	C-521-M	
Bell, Richard James	B-014-N	Edward G Durbin
Benson, Bradford	A-379-S	John Carlstrom
Benson, Terry	A-107-S	Albrecht Karle
Bent, Jonathan	O-214-L	Colm Sweeney
Benton, Steven	A-147-M	Mark Devlin
Bercovici, Sarah Kathyrn Jirikowic	O-309-N	Dennis Arthur Hansell
Bernard, Kim	B-020-L/P	Deborah Steinberg
Bertrand, Erin	B-394-M	Andrew Allen
Bertrand, Erin	B-394-M	Andrew Allen
Bianchini, Allegra Michiko	C-515-E/L	Eugene Domack
Bischoff, Colin NMI	A-039-S	John Kovac
Bisson, Kelsey Marie	B-509-M	W. Berry Lyons
Blalock, Bonnie NMI	B-014-N	Edward G Durbin
Bliss, Kelli-Ann Elizabeth	O-257-M/S	
Blythe, Daren	C-524-M	Frank Rack
Bochdansky, Alexander Boris	O-309-N	Dennis Arthur Hansell
Bohlander, Jennifer	C-515-E/L	Eugene Domack
Bomfleur, Bemjamin NMI	G-496-M	Edith Taylor
Bonner, Colin S.	A-364-S	Craig Kulesa
Booth, John Francis	O-257-M/S	
Bose, Richard G	A-142-M	John Mitchell
Bowers, Matthew Thomas	B-206-E	Ari Seth Friedlaender
Boyce, Joe	G-058-M	Ralph Harvey
Boyce, Joseph M.	G-057-M	Ralph Harvey
Brachfeld, Stefanie	C-515-E/L	Eugene Domack

Braddock, Peter	I-351-M	Leigh Stearns
Braddock, Scott	B-225-M	Paul Koch
Branson, David Russell	B-281-N	Kenneth Halanych
Brasso, Rebecka Lauren	B-044-E	Ron Naveen
Braun, Dana L	A-142-M	John Mitchell
Briccetti, Angelo	A-333-S	Francis Halzen
Broadbent, Heather	B-174-M	Stacy Kim
Bronk, Deborah	B-394-M	Andrew Allen
Buchanan, David	G-496-M	Edith Taylor
Buder, Immanuel NMI	A-039-S	John Kovac
Buelow, Heather	B-330-M	Cristina Takacs-Vesbach
Bundy, Randelle M	C-515-E/L	Eugene Domack
Burnett, David	B-174-M	Stacy Kim
Burns, Jennifer	B-232-M	Daniel Costa
Burns, Mark	T-927-M	Bruce Thoman
Bustos, Felipe	A-333-S	Francis Halzen
Butterworth, Brian Jeffrey	O-278-N	Scott Miller
Byrd, Don	T-396-M	Curt Szuberla
Campo, Jennifer M	C-515-E/L	Eugene Domack
Cannon, Johanna T	B-281-N	Kenneth Halanych
Cape, Mattias	C-515-E/L	Eugene Domack
Carpenter, Chad	C-524-M	Frank Rack
Carvajal, Jose		Gregory Rouse
Carvalho, Ana Filipa NMI	B-019-L/P	Oscar Schofield
Casagrande, David Scott	B-014-N	Edward G Durbin
Casanovas-Garcia, Paula	B-044-E	Ron Naveen
Casas, Maria Constanza	B-014-N	Edward G Durbin
Cassidy, Patrick	T-350-M	Charles Bentley
Castendyk, Devin	B-506-M	Diane McKnight
Chambert, Thierry	B-009-M	Jay Rotella

Chang, Clarence	A-379-S	John Carlstrom
Chang, Susan	T-927-M	Bruce Thoman
Chapman, Daniel	A-146-M	Shaul Hanany
Chavez, Greg Antonio	T-299-M	Paul Carpenter
Chen, Cao	A-130-M	Xinzhao Chu
Chen, Chih-ching	A-107-S	Albrecht Karle
Chen, Gang NMI	B-014-N	Edward G Durbin
Child, Sarah F	I-351-M	Leigh Stearns
Childs, Dean Mark	G-079-M	Terry Wilson
Childs, Dean Mark	T-299-M	Paul Carpenter
Chiuchiolo, Amy	B-505-M	John Priscu
Cho, Hsiao-Mei NMI	A-379-S	John Carlstrom
Christ, Andrew J	C-515-E/L	Eugene Domack
Christner, Brent	C-523-M	John Priscu
Claeson, Kerin Michele	G-182-E	Matthew Lamanna
Clarke, Julia	G-182-E	Matthew Lamanna
Cleary, Alison	B-014-N	Edward G Durbin
Clouse, Melissa Ann	O-309-N	Dennis Arthur Hansell
Cole-Dai, Jihong	I-476-M	Jeffrey Severinghaus
Collins, Clint Alan	B-174-M	Stacy Kim
Connell, Laurie	G-439-M	Hubert Staudigel
Conroy, Brandon Judd	B-020-L/P	Deborah Steinberg
Conway, Howard	I-414-M	John Stone
Conway, Maurice	I-210-M	Howard Conway
Conway, Maurice	I-414-M	John Stone
Cope, Joseph	B-020-L/P	Deborah Steinberg
Coronado, Carlos Jose	B-281-N	Kenneth Halanych
Cossio, Anthony	B-006-N	George Watters
Couto, Nicole	B-019-L/P	Oscar Schofield
Coyne, Jamie P.	T-350-M	Charles Bentley
Crenshaw, Jared Keith	O-176-L/P	David Corbett

Crites, Abigail	A-379-S	John Carlstrom
Crockett, Elizabeth LeBourgeois	B-036-L/P	Kristin M. O'Brien
Cronin, Kyle David	B-511-M	Peter Doran
Curtis, Aaron	G-081-M	Phillip Kyle
Cziko, Paul	B-010-L/M/P	Chi-Hing Christina Cheng
Dacey, John W	B-003-P	Francois M Morel
Dagit, Rosemary	B-044-E	Ron Naveen
Dahnert, Kristina	T-350-M	Charles Bentley
Dahood-Fritz, Adrian	B-006-N	George Watters
Dale, Christoper Robin	G-078-M	Robert Kemerait
Daly, Kendra	B-174-M	Stacy Kim
Daughhetee, Jacob	A-333-S	Francis Halzen
Davies, Jonathan Paul	A-107-S	Albrecht Karle
Davila, Alfonso	B-302-M	Christopher McKay
Davis, Robert E	T-940-M	Renee Melendy
de Haan, Tijmen	A-379-S	John Carlstrom
Decombeix, Anne-Laure	G-496-M	Edith Taylor
DeCuollo, Samantha Christine	B-014-N	Edward G Durbin
DeForce, Emelia	B-045-L/P	Hugh William Ducklow
Dejong, Hans NMI	O-309-N	Dennis Arthur Hansell
Delaney, Allan	T-940-M	Renee Melendy
Dennis, Michelle Frances	B-014-N	Edward G Durbin
Detrich, Bill	B-029-L/P	John Harvey Postlethwait
DeVoe, Jesse	B-009-M	Jay Rotella
DeVries, Art	B-010-L/M/P	Chi-Hing Christina Cheng
DeVries, Elliot Arthur	B-010-L/M/P	Chi-Hing Christina Cheng
Dickson, James	G-080-M	Joseph Levy
Didier-Scapel, Joy	A-146-M	Shaul Hanany
Dietrich, Kimberly	B-006-N	George Watters

Disterhoft, Patrick	O-257-M/S	
Disterhoft, Patrick	O-257-M/S	
Disterhoft, Patrick	O-264-P	
DiTullio, Giacomo R	O-309-N	Dennis Arthur Hansell
Dobbs, Matthew	A-146-M	Shaul Hanany
Dober, Bradley	A-147-M	Mark Devlin
Dolhi, Jenna	B-247-M	Rachael Morgan-Kiss
Dowkontt, Paul F	A-142-M	John Mitchell
DuBay, Brian Robert	G-061-M	Samantha Hansen
Dugan, Hilary	B-511-M	Peter Doran
Dugger, Katie	B-031-M	David Ainley
Duling, Dennis	C-524-M	Frank Rack
Dunbar, Robert B	O-309-N	Dennis Arthur Hansell
Durban, John	B-206-E	Ari Seth Friedlaender
Durban, John	B-174-M	Stacy Kim
DuVernois, Michael	A-107-S	Albrecht Karle
Ebihara, Yusuke	A-111-M/S	Allan T Weatherwax
Echeverry, Gonzalo	G-099-M	Duncan A Young
Echeverry, Gonzalo	G-098-M	Donald Blankenship
Edwards, Robert Lyman	C-523-M	John Priscu
Enzor, Laura	B-199-M	Sean Place
Evans, John P	G-432-E	David L. Barbeau
Evenson, Paul Arthur	A-120-M	John Bieber
Fair, Alexandria Corinne	B-506-M	Diane McKnight
Fan, Zongnan	A-127-M	Steven Barwick
Farrer, Jessica	B-009-M	Jay Rotella
Farry, Shawn	B-013-L/P	Bill Fraser
Fegyveresi, John	I-477-M	Kendrick Taylor
Ferris, David	T-350-M	Charles Bentley
Fields, Lauren	B-010-L/M/P	Chi-Hing Christina Cheng

Fink, Michael Charles	B-006-N	George Watters
Fish, Chadwin Scott	A-106-M/S	C. Robert Clauer
Fish, Chadwin Scott	A-106-M/S	C. Robert Clauer
Fisher, Andrew T	C-521-M	
Fissel, Laura	A-147-M	Mark Devlin
Fliescher, Stefan	A-149-S	Clement Pryke
Fong, Weichun	A-130-M	Xinzhao Chu
Force, Michael Peter	B-006-N	George Watters
Forrest, Steve	B-044-E	Ron Naveen
Foust, Forrest Robert	A-336-P	John T Gill
Fox, Brian	G-078-M	Robert Kemerait
Fox, Douglas	C-521-M	
Francis, Jane Elizabeth	G-182-E	Matthew Lamanna
Frazier, Curtis	A-145-M	Bill Stepp
Frechette, Jedediah	G-081-M	Phillip Kyle
Gaetani, Glenn	G-092-M	Kenneth W Sims
Galaska, Matthew NMI	B-281-N	Kenneth Halanych
Gales, Nick	B-206-E	Ari Seth Friedlaender
Galitzki, Nicholas	A-147-M	Mark Devlin
Gandilo, Natalie	A-147-M	Mark Devlin
Garrison, Cody Edward	O-309-N	Dennis Arthur Hansell
Garrott, Robert	B-009-M	Jay Rotella
Gearheart, Geoffrey NMI	B-464-N	Gerald Kooyman
George, Elizabeth	A-379-S	John Carlstrom
Geyer, Kevin	B-507-M	Diana Wall
Geyer, Kevin	B-507-M	Diana Wall
Gibson, Christopher	T-350-M	Charles Bentley
Gibson, Dar	C-524-M	Frank Rack
Giese, Alexandra Leigh	I-209-M	Howard Conway
Gilpin, Erin K	G-432-E	David L. Barbeau
Giudice, Gaetano	G-081-M	Phillip Kyle

Gladish, Carl	C-407-M	Robert Bindschadler
Gladish, Carl	O-286-M	David Holland
Glass, Brian	B-302-M	Christopher McKay
Gleiber, Miram	B-020-L/P	Deborah Steinberg
Glowacki, David	A-333-S	Francis Halzen
Goetz, Kim	B-232-M	Daniel Costa
Goetz, Kim	B-464-N	Gerald Kooyman
Goldman, Johanna Aurore Laurene	B-003-P	Francois M Morel
Gonzalez, Santiago Ramon	O-309-N	Dennis Arthur Hansell
Goordial, Jacqueline NMI	B-302-M	Christopher McKay
Graham, Rebecca S Robinson	B-014-N	Edward G Durbin
Graw, Jordan Hunter	G-061-M	Samantha Hansen
Greenbaum, Jamin	G-099-M	Duncan A Young
Greenbaum, Jamin	G-098-M	Donald Blankenship
Greene, Chad A	G-099-M	Duncan A Young
Greene, Chad A	G-098-M	Donald Blankenship
Greene, Rachel A	B-014-N	Edward G Durbin
Gregg, Gerald	A-145-M	Bill Stepp
Grim, Sharon NMI	B-228-P	Linda Angela Amaral Zettler
Grima, Cyril NMI	G-098-M	Donald Blankenship
Grossart, Hans-Peter	B-505-M	John Priscu
Guest, Brian Joseph	O-124-L	James Robert Ledwell
Gulbranson, Erik	G-496-M	Edith Taylor
Gutowski, Gail R	G-099-M	Duncan A Young
Gutowski, Gail R	G-098-M	Donald Blankenship
Hagen-Peter, Graham	G-064-M	John Cottle
Hall, Cameron Evan	O-240-M	John Cassano
Halverson, Nils	A-379-S	John Carlstrom
Hamilton, Darrell	A-107-S	Albrecht Karle
Hamilton, Gordon	I-351-M	Leigh Stearns

Hams, Jackie	G-054-M	David R Marchant
Hams, Jacquelyn	G-054-M	David R Marchant
Hams, Thomas	A-142-M	John Mitchell
Hansen, Tony	O-257-M/S	
Hansman, Roberta Lynn	O-309-N	Dennis Arthur Hansell
Haran, Terence	C-514-E	Theodore Scambos
Harrington, Nicholas	A-379-S	John Carlstrom
Hassler, Birgit NMI	O-257-M/S	
Hassumani, Daniel	B-308-M	Bradley Buckley
Haugen, James	A-333-S	Francis Halzen
Haus, Nicholas	G-239-P	James Bockheim
Hawley, Robert L	I-209-M	Howard Conway
Hay, Michael John	I-210-M	Howard Conway
Hayden, Alistair Thompson	G-054-M	David R Marchant
Hays, Jack	A-145-M	Bill Stepp
Heath II, Thomas D	B-014-N	Edward G Durbin
Hebert, Jason Paul	T-299-M	Paul Carpenter
Hell, Katherina	B-505-M	John Priscu
Helmericks, Jay	T-396-M	Curt Szuberla
Helson, Kyle	A-146-M	Shaul Hanany
Hendrickson, James	T-927-M	Bruce Thoman
Henning, Jason	A-379-S	John Carlstrom
Herold, Bjoern NMI	A-333-S	Francis Halzen
Herried, Bradley	T-434-M	Paul Morin
Herrmann, Paul	O-240-M	John Cassano
Hillbrand, Seth	A-146-M	Shaul Hanany
Hillgarth, Nigella Mary Kiara	B-464-N	Gerald Kooyman
Hindle, Allyson	B-470-M	Jo-Ann Mellish
Hindmarsh, Richard Carl Aidan	I-209-M	Howard Conway
Ho, Colin	C-521-M	
Hodge, Brendan Evans	T-295-M	Joseph R Pettit

Hodson, Timothy Oliver	C-522-M	Ross Powell
Hoffman, Jeffrey	B-394-M	Andrew Allen
Holland, David Michael	C-407-M	Robert Bindschadler
Hollingsworth, Abigail Lynn	B-281-N	Kenneth Halanych
Hoover, Stephen	A-379-S	John Carlstrom
Horning, Markus	B-470-M	Jo-Ann Mellish
Horton, Forrest Miller	G-064-M	John Cottle
Houghton, Leah Anne	O-124-L	James Robert Ledwell
Hrubes, James	A-379-S	John Carlstrom
Huber, Bruce Alan	C-515-E/L	Eugene Domack
Huber, Bruce Alan	O-261-N	Xiaojun Yuan
Hubmayr, Johannes	A-379-S	John Carlstrom
Huerta, Audrey	G-079-M	Terry Wilson
Hummon, Julia	O-317-L/N	Teresa Chereskin
Humphrey, Jim	A-145-M	Bill Stepp
Hunter, Evan	B-199-M	Sean Place
Hutchins, David	B-394-M	Andrew Allen
Inglis, Gabrielle NMI	B-014-N	Edward G Durbin
Isbell, John	G-496-M	Edith Taylor
Jaros, Chris	B-506-M	Diane McKnight
Jayred, Michael	T-350-M	Charles Bentley
Jenkins, Bethany	B-014-N	Edward G Durbin
Jinnah, Zubair Ali	G-182-E	Matthew Lamanna
Johnson, Jay	T-350-M	Charles Bentley
Johnston, David	B-045-L/P	Hugh William Ducklow
Johnston, Eric Glenn	B-009-M	Jay Rotella
Jones, Christopher David	B-006-N	George Watters
Jones, Jason Alan	B-009-M	Jay Rotella
Jones, Randolph Michael	B-042-M	David Ainley
Joy, Katherine	G-057-M	Ralph Harvey
Kaiser, Henry	B-470-M	Jo-Ann Mellish

Kambarn, William	T-927-M	Bruce Thoman
Kane, Mary Kathryn	B-014-N	Edward G Durbin
Kappes, Peter	B-031-M	David Ainley
Kapsenberg, Lydia	B-134-M	Gretchen Hofmann
Karkare, Kirit S	A-039-S	John Kovac
Karle, Albrecht	A-333-S	Francis Halzen
Karner, James	G-058-M	Ralph Harvey
Kaufman, Jonathan	A-039-S	John Kovac
Keisler, Ryan	A-379-S	John Carlstrom
Kelleher, Cole	T-434-M	Paul Morin
Kelley, Amanda Lynn	B-134-M	Gretchen Hofmann
Kelley, John	A-333-S	Francis Halzen
Kelly, Susan NMI	C-523-M	John Priscu
Kendall, Christopher	A-379-S	John Carlstrom
Kendrick, Brian Jacob	O-309-N	Dennis Arthur Hansell
Kendrick, Eric Clyde	G-079-M	Terry Wilson
Kenyon, Lindsey Metcalf	G-061-M	Samantha Hansen
Kernebone, Peter	O-240-M	John Cassano
Khanwalkar, Urjeet NMI	B-029-L/P	John Harvey Postlethwait
Killingsworth, Drea	G-081-M	Phillip Kyle
Kim, Hyomin	A-106-M/S	C. Robert Clauer
King, Joseph	G-078-M	Robert Kemerait
Klein, Andrew	B-518-M	Mahlon Kennicutt
Klein, Jeffery	A-147-M	Mark Devlin
Klein, Jeffrey	A-146-M	Shaul Hanany
Kleinfelder, Stuart	A-127-M	Steven Barwick
Klueter, Anke		Gregory Rouse
Knuth, Margaret	T-940-M	Renee Melendy
Knuth, Shelley Lynne	O-240-M	John Cassano
Kocot, Kevin Michael	B-281-N	Kenneth Halanych

Kohler, Tyler	B-506-M	Diane McKnight
Kopper, Claudio NMI	A-333-S	Francis Halzen
Korotkov, Andrey	A-146-M	Shaul Hanany
Koutnik, Michelle	I-210-M	Howard Conway
Kovac, John	A-149-S	Clement Pryke
Koweek, David NMI	O-309-N	Dennis Arthur Hansell
Kranz, Sven Alexander	B-003-P	Francois M Morel
Kromer, Edward	G-090-P/S	Kent Anderson
Kromer, Edward P	G-090-P/S	Kent Anderson
Kujawski, Joseph	A-111-M/S	Allan T Weatherwax
Kunnari, Joel, Jr William	T-940-M	Renee Melendy
Kurz, Mark	I-311-M	Peter U. Clark
Kwon, Miye NMI	B-505-M	John Priscu
Kyle, Philip R	G-092-M	Kenneth W Sims
Kyrmanidou, Anastasia NMI	C-515-E/L	Eugene Domack
Lacelle, Denis	B-302-M	Christopher McKay
Lamp, Jennifer	G-054-M	David R Marchant
Landsman, Yael Hagar	A-107-S	Albrecht Karle
Landsman, Yael Hagar	A-107-S	Albrecht Karle
Laperriere, Sarah Marie	B-045-L/P	Hugh William Ducklow
Laperriere, Sarah Marie	B-228-P	Linda Angela Amaral Zettler
Larsen, Elise	B-044-E	Ron Naveen
LaRue, Michelle	T-434-M	Paul Morin
LaRue, Michelle Ann	B-044-E	Ron Naveen
Laundrie, Andrew	A-333-S	Francis Halzen
Lawrence, Jon Simon	A-364-S	Craig Kulesa
Lawson, Brian	T-396-M	Curt Szuberla
Lawson, Kathleen	T-396-M	Curt Szuberla
Lebar, Don	T-350-M	Charles Bentley
LeBaron, Michael Roy	C-522-M	Ross Powell
Lee, Allison Michelle	O-309-N	Dennis Arthur Hansell

Lee, Marissa	B-308-M	Bradley Buckley
Lee, Peter A	O-309-N	Dennis Arthur Hansell
Leitch, Erik	A-379-S	John Carlstrom
Lesser, David	A-364-S	Craig Kulesa
Leventer, Amy	C-515-E/L	Eugene Domack
Li, Wei NMI	B-247-M	Rachael Morgan-Kiss
Lidstrom, Sven	A-333-S	Francis Halzen
Lidstrom, Sven	A-333-S	Francis Halzen
Lieb-Lappen, Ross M	O-263-M	Rachel W Obbard
Limon, Michele	A-146-M	Shaul Hanany
Lindquist, Kirsten	B-031-M	David Ainley
Lloyd, Andrew	G-079-M	Terry Wilson
Logan, Nickolas	O-240-M	John Cassano
Longano, Emily Arwen	I-477-M	Kendrick Taylor
Lueker, Martin	A-149-S	Clement Pryke
Luria, Catherine	B-045-L/P	Hugh William Ducklow
Luria, Catherine	B-228-P	Linda Angela Amaral Zettler
Lynch, Heather	B-044-E	Ron Naveen
MacDermid, Kevin	A-146-M	Shaul Hanany
Mackay, Sean	G-054-M	David R Marchant
MacPhee, Ross Douglas Earle	G-182-E	Matthew Lamanna
Mader, Marianne	G-058-M	Ralph Harvey
Mahon, Andrew	B-281-N	Kenneth Halanych
Main, Joel Clifford	G-079-M	Terry Wilson
Maksym, Ted	O-242-E	Katherine Colby Leonard
Mandell, Mitchell NMI		Gregory Rouse
Mannas, Jen	B-013-L/P	Bill Fraser
Margolin, Andrew Reynolds	O-309-N	Dennis Arthur Hansell
Marinova, Margarita	B-302-M	Christopher McKay
Markle, Bradley Ross	I-477-M	Kendrick Taylor
Massaro, Melanie	B-031-M	David Ainley

Masters, Otto	A-145-M	Bill Stepp
Matthews, Tristan	A-147-M	Mark Devlin
McBrearty, Rob	G-079-M	Terry Wilson
McBrearty, Rob	G-079-M	Terry Wilson
McCarthy, Michael	A-110-M/S	Gonzalo Hernandez
McCoy, Iain Mimm	B-014-N	Edward G Durbin
McDowall, Philip Simon	B-044-E	Ron Naveen
McGaw, David	A-112-M	Allan T Weatherwax
McQuaid, Jeff	B-394-M	Andrew Allen
Medved, Alexandra NMI	B-281-N	Kenneth Halanych
Meister, Konrad Kaspar	B-010-L/M/P	Chi-Hing Christina Cheng
Melville, Bob	A-112-M	Allan T Weatherwax
Menden-Deuer, Susanne	B-014-N	Edward G Durbin
Meures, Thomas	A-107-S	Albrecht Karle
Michaud, Alexander	C-523-M	John Priscu
Miki, Christian	A-107-S	Albrecht Karle
Mikolajczyk, David	O-283-M	Matt Lazzara
Mikucki, Jill	C-523-M	John Priscu
Miles, Meredith Kathryn	O-309-N	Dennis Arthur Hansell
Miller, Aileen Kilpatrick	B-044-E	Ron Naveen
Miller, Amber	A-146-M	Shaul Hanany
Milligan, Michael	A-146-M	Shaul Hanany
Miner, Jeremy	G-079-M	Terry Wilson
Mironov, Anatoly	G-098-M	Donald Blankenship
Mitchell, Andrew Charles	C-523-M	John Priscu
Mitchell, Michael	A-109-M/P/S	Robert C Moore
Moe, Heather	O-257-M/S	
Monk, David T	C-522-M	Ross Powell
Monnin, Mee-ya	B-470-M	Jo-Ann Mellish

Moore, Jenna		Gregory Rouse
Morris, Linda M.	T-350-M	Charles Bentley
Mortensen, Nicolai	T-350-M	Charles Bentley
Morton, Elizabeth	T-350-M	Charles Bentley
Mose, David Dean	G-078-M	Robert Kemerait
Mucciarone, David A	O-309-N	Dennis Arthur Hansell
Mueller, Thomas	B-044-E	Ron Naveen
Munday-Goldman, Murphy Ann	W-493-M	Diane Tuft
Murgai, Nikhil	B-045-L/P	Hugh William Ducklow
Murphy, Katherine Rose	B-010-L/M/P	Chi-Hing Christina Cheng
Murphy, Ryan Patrick	A-142-M	John Mitchell
Murray, Alison	B-006-N	George Watters
Nakamura, Tomoko NMI	G-057-M	Ralph Harvey
Nam, Jiwoo	A-107-S	Albrecht Karle
Nappi, Deanna D'Amato	C-515-E/L	Eugene Domack
Natoli, Tyler	A-379-S	John Carlstrom
Netterfield, Barth	A-147-M	Mark Devlin
Ng, Gregory	G-099-M	Duncan A Young
Ng, Gregory	G-098-M	Donald Blankenship
Nguyen, Hien	A-039-S	John Kovac
Nichols, Erik	A-379-S	John Carlstrom
Norman, Shaun Michael	G-057-M	Ralph Harvey
Novak, Giles	A-147-M	Mark Devlin
Novosad, Valentyn NMI	A-379-S	John Carlstrom
Nowacek, Doug	B-206-E	Ari Seth Friedlaender
Null, Kimberly	O-176-L/P	David Corbett
Nylen, Thomas	T-295-M	Joseph R Pettit
O'Connor, Patrick	G-182-E	Matthew Lamanna
Ogburn, Walter	A-149-S	Clement Pryke
Okal, Marianne	T-295-M	Joseph R Pettit

Oliver, Benjamin Peter	G-432-E	David L. Barbeau
Oppenheimer, Clive	G-081-M	Phillip Kyle
Orchard, Michael James	B-014-N	Edward G Durbin
Orr, Dwayne	A-145-M	Bill Stepp
Orr, Gerald	A-145-M	Bill Stepp
Palmer, Terence	B-518-M	Mahlon Kennicutt
Park, Yongcheol	G-061-M	Samantha Hansen
Pascale, Enzo	A-147-M	Mark Devlin
Patterson-Fraser, Donna	B-013-L/P	Bill Fraser
Paul, Larissa NMI	A-333-S	Francis Halzen
Pautet, Pierre-Dominique	A-119-M/S	Michael Taylor
Pennycook, Jean	B-031-M	David Ainley
Pernic, David	A-107-S	Albrecht Karle
Pesce, Andrea Suzanne	B-006-N	George Watters
Peters, Leo	C-407-M	Robert Bindschadler
Peters, Nial	G-081-M	Phillip Kyle
Peterson, Richard Neil	O-176-L/P	David Corbett
Pettit, Erin Christine	C-515-E/L	Eugene Domack
Pitman, Robert	B-206-E	Ari Seth Friedlaender
Pitman, Robert	B-174-M	Stacy Kim
Pobes Aranda, Carlos	A-333-S	Francis Halzen
Pollard, Anne	B-031-M	David Ainley
Pollard, Wayne	B-302-M	Christopher McKay
Pomraning, Dale	C-407-M	Robert Bindschadler
Ponganis, Katherine	B-197-M	Paul Ponganis
Porter, Claire	T-434-M	Paul Morin
Porzig, Elizabeth	B-031-M	David Ainley
Pound, Rachel	B-006-N	George Watters
Powell, Evelyn M	G-099-M	Duncan A Young
Powell, Robert Sherman	C-524-M	Frank Rack
Pratt, Jonathan Richard	G-432-E	David L. Barbeau

Price, Lori	B-020-L/P	Deborah Steinberg
Price, Mary Lynn	B-009-M	Jay Rotella
Provost, Mikaela Marie	B-019-L/P	Oscar Schofield
Pugmire, Jonathan Rich	A-119-M/S	Michael Taylor
Qiu, Congxin	A-146-M	Shaul Hanany
Quesada, Jorge	C-525-M	Susan Schwartz
Raach, Catherine	A-146-M	Shaul Hanany
Rasmussen, Daniel James	G-092-M	Kenneth W Sims
Ratliff, Elizabeth Catherine	A-333-S	Francis Halzen
Ratzlaff, Ken	A-107-S	Albrecht Karle
Read, Andrew	B-206-E	Ari Seth Friedlaender
Reed, Corey	A-127-M	Steven Barwick
Reese, Thomas Nessbit	O-324-M	Lars E Kalnajs
Reichborn-Kjennerud, Britt	A-146-M	Shaul Hanany
Reiss, Christian	B-006-N	George Watters
Reynolds, Adam Scott	A-106-M/S	C. Robert Clauer
Richard, Jacob	A-145-M	Bill Stepp
Richerson, Kate	B-006-N	George Watters
Richman, Michael D	A-107-S	Albrecht Karle
Richter, Steffen	A-039-S	John Kovac
Richter, Thomas	G-099-M	Duncan A Young
Rider, Melissa	B-044-E	Ron Naveen
Riedel, Benedikt NMI	A-333-S	Francis Halzen
Riesselman, Christina	O-309-N	Dennis Arthur Hansell
Rigoni, Anthony Jerome Monnet	G-439-M	Hubert Staudigel
Roberts, Darren	B-009-M	Jay Rotella
Roberts, Graham	C-524-M	Frank Rack
Roberts, J.R.	G-079-M	Terry Wilson
Roberts, Michael	G-079-M	Terry Wilson
Roberts, Michael	I-351-M	Leigh Stearns
Robertson, Scott	G-078-M	Robert Kemerait

Rodriguez, Diego	B-006-N	George Watters
Roman, Christopher Neil	B-014-N	Edward G Durbin
Romanoff, Natalie NMI	C-515-E/L	Eugene Domack
Rosenheim, Brad E.	C-515-E/L	Eugene Domack
Roth, James	A-333-S	Francis Halzen
Ruck, Kate	B-020-L/P	Deborah Steinberg
Rush, Kurt	T-966-M	Mike Comberiate
Ryberg, Patricia	G-496-M	Edith Taylor
Rynearson, Tatiana A	B-014-N	Edward G Durbin
Rytel, Alexander Louis	G-080-M	Joseph Levy
Saba, Grace	B-019-L/P	Oscar Schofield
Sakai, Kenichi	A-142-M	John Mitchell
Salisbury, Steven Walter	G-182-E	Matthew Lamanna
Sampson, Daniel NMI	C-521-M	
San Sebastian, Frank	A-142-M	John Mitchell
Sands, Chester John	B-281-N	Kenneth Halanych
Sandstrom, Perry	A-333-S	Francis Halzen
Santora, Jarrod	B-006-N	George Watters
Sasaki, Makoto	A-142-M	John Mitchell
Savarino, Joel	O-233-M	Detlev Helmig
Sayre, James	A-379-S	John Carlstrom
Scambos, Ted	C-515-E/L	Eugene Domack
Scheick, Jessica B.	I-351-M	Leigh Stearns
Scherer, Reed	C-522-M	Ross Powell
Schnell, Russell	O-257-M/S	
Schoenrock, Kathryn	B-027-P	James McClintock
Schram, Julie	B-027-P	James McClintock
Schutt, John	G-058-M	Ralph Harvey
Schwarz, Robert	A-149-S	Clement Pryke
Schwierzke-Wade, Leslie NMI	B-174-M	Stacy Kim

Scott, Ryan Christopher	O-314-M	Dan Lubin
Scriber, Kevin Emmanuel	B-027-P	James McClintock
Seidel, Dena Katzen	B-019-L/P	Oscar Schofield
Seifert, Meghan	G-081-M	Phillip Kyle
Serbet, Rudolph	G-496-M	Edith Taylor
Sertich, Joseph John Warren	G-182-E	Matthew Lamanna
Sharp, Thomas	G-058-M	Ralph Harvey
Shaw, William	C-407-M	Robert Bindschadler
Shaw, William James	C-407-M	Robert Bindschadler
Sheehan, Eileen Pamela	B-029-L/P	John Harvey Postlethwait
Sheehy, Chris	A-149-S	Clement Pryke
Shero, Michelle	B-232-M	Daniel Costa
Shevenell, Amelia Endicott	C-515-E/L	Eugene Domack
Shore, Patrick	G-089-M/S	Douglas Wiens
Shortt, Michael Alan	C-407-M	Robert Bindschadler
Siebenaler, Amber Grace	B-247-M	Rachael Morgan-Kiss
Siegfried, Matthew	C-521-M	
Simburger, Garry	A-142-M	John Mitchell
Sinkola, Nickolas	T-927-M	Bruce Thoman
Sipler, Rachel	B-394-M	Andrew Allen
Skidmore, Mark	C-523-M	John Priscu
Skinner, John	B-470-M	Jo-Ann Mellish
Smecher, Graeme NMI	A-379-S	John Carlstrom
Smiciklas, Marc NMI	A-103-S	Michael V Romalis
Smith, Catherine D.	C-515-E/L	Eugene Domack
Smith, Walker	B-042-M	David Ainley
Soler Pulido, Juan	A-147-M	Mark Devlin
Spackeen, Jenna	B-394-M	Andrew Allen
Spaleta, Jeff	A-369-M/S	William Bristow
Spector, Perry	I-414-M	John Stone
Sprintall, Janet NMI	O-261-N	Xiaojun Yuan

Spuck, Timothy Steven	A-112-M	Allan T Weatherwax
Stackpole, Eric Lewis	B-174-M	Stacy Kim
Staite, Brian James	G-496-M	Edith Taylor
Stam, Christina Nicole	C-407-M	Robert Bindschadler
Staniszewski, Zachary	A-149-S	Clement Pryke
Stanton, Timothy	C-407-M	Robert Bindschadler
Steinarsson, Einar	C-407-M	Robert Bindschadler
Stephens, Britton B	O-214-L	Colm Sweeney
Stevens, Rachel Christine	O-309-N	Dennis Arthur Hansell
Stierle, Scott William	O-257-M/S	
Stierle, Scott William	O-257-M/S	
Stierle, Scott William	O-264-P	
Stillinger, Andrew	A-112-M	Allan T Weatherwax
Stimpert, Alison	B-206-E	Ari Seth Friedlaender
Stockel, James	C-407-M	Robert Bindschadler
Stockel, James	C-407-M	Robert Bindschadler
Stokes, Sarah	A-149-S	Clement Pryke
Storey, John W.V.	A-364-S	Craig Kulesa
Story, Kyle	A-379-S	John Carlstrom
Strebel, Stefanie	B-045-L/P	Hugh William Ducklow
Strugnell, Jan		Gregory Rouse
Stukel, Michael	B-045-L/P	Hugh William Ducklow
Stukel, Michael	B-252-P	Hugh William Ducklow
Surrey-Marsden, Claire Vanessa	B-006-N	George Watters
Suzuki, Yasuko NMI	B-031-M	David Ainley
Sweet, Stephen	B-518-M	Mahlon Kennicutt
Tatar, Joulien	A-127-M	Steven Barwick
Tebo, Bradley	G-439-M	Hubert Staudigel
Tempest, Kevin E	O-254-L	Steven R Emerson
Teply, Grant	A-149-S	Clement Pryke
Thoresen, Lars	B-006-N	George Watters

Tickner, James		Gregory Rouse
Tolan, James	A-149-S	Clement Pryke
Tortell, Philippe	B-003-P	Francois M Morel
Trisca, Gabriel Omar	T-966-M	Mike Comberiate
Truffer, Martin	C-407-M	Robert Bindschadler
Trummel, Betty	C-522-M	Ross Powell
Tucker, Gregory	A-147-M	Mark Devlin
Turner, Anthony D	A-149-S	Clement Pryke
Turnross, Olivia Renee	B-134-M	Gretchen Hofmann
Tytgat, Guy	G-089-M/S	Douglas Wiens
Tytgat, Guy	T-299-M	Paul Carpenter
Usher, Mika NMI	I-414-M	John Stone
Van Dam, Brie Anne	O-233-M	Detlev Helmig
van Gestel, Natasja	B-045-L/P	Hugh William Ducklow
Van Horn, David	B-330-M	Cristina Takacs-Vesbach
Vandegehuchte, Martijn	B-507-M	Diana Wall
Varsani, Arvind	B-042-M	David Ainley
Velasco-Schwartz, Megan Laurel	B-281-N	Kenneth Halanych
Venema, Bryan	A-110-M/S	Gonzalo Hernandez
Venkataramani, Karthik NM	A-106-M/S	C. Robert Clauer
Vernet, Maria	C-515-E/L	Eugene Domack
Vick, Trista	C-523-M	John Priscu
Vieregg, Abigail	A-149-S	Clement Pryke
Vimercati, Lara	B-045-L/P	Hugh William Ducklow
Virginia, Ross	B-507-M	Diana Wall
Viso, Richard Ford	O-176-L/P	David Corbett
Voigt, Don	I-477-M	Kendrick Taylor
Wadhwa, Meenakshi	G-058-M	Ralph Harvey
Wallace, Paul Judson	G-092-M	Kenneth W Sims
Walsh, Jennifer	B-006-N	George Watters

Walsh, John Patrick	O-176-L/P	David Corbett
Walworth, Nathan Gerad	B-394-M	Andrew Allen
Ward, John Ennis	A-142-M	John Mitchell
Ward, Lewis Michael		Joseph Kirschvink
Watt, Andrew	O-214-L	Colm Sweeney
Weese, David Andrew	B-281-N	Kenneth Halanych
Weiss, Elliot	B-006-N	George Watters
Welch, Kathy	B-509-M	W. Berry Lyons
Welhouse, Lee	O-283-M	Matt Lazzara
Wellner, Julia	C-515-E/L	Eugene Domack
Welsh, Rory Millen	B-004-M	Andrew Thurber
Wendell, Edward	T-927-M	Bruce Thoman
Westlund, Randy	T-966-M	Mike Comberiate
Whittaker, Kerry Ann	B-014-N	Edward G Durbin
Wiens, Doug	G-079-M	Terry Wilson
Wilhelm, Kelly	G-239-P	James Bockheim
Wilson, Kevin J	T-940-M	Renee Melendy
Wilson, Nerida		Gregory Rouse
Winberry, J. Paul	I-210-M	Howard Conway
Wisniewski, Paul	A-333-S	Francis Halzen
Withoff, David	T-396-M	Curt Szuberla
Wlostowski, Adam	B-506-M	Diane McKnight
Wolf, Caitlin Rose	B-330-M	Cristina Takacs-Vesbach
Wong, Chin Lin NMI	A-039-S	John Kovac
Woods, Kathleen	B-045-L/P	Hugh William Ducklow
Wright, Marissa Ashton	G-432-E	David L. Barbeau
Writer, Erin Heather	G-092-M	Kenneth W Sims
Wujcik, Jody	B-036-L/P	Kristin M. O'Brien
Xu, Kai	B-394-M	Andrew Allen
Xu, Zhonghua NM	A-106-M/S	C. Robert Clauer
Young, Abram	A-364-S	Craig Kulesa

Young, Duncan	G-098-M	Donald Blankenship
Young, Jodi Nicole	B-003-P	Francois M Morel
Young, Robert	A-107-S	Albrecht Karle
Yu, Hang NMI		Joseph Kirschvink
Yu, Pauline	B-134-M	Gretchen Hofmann
Zatko, Maria C	O-201-E	Stephen Warren
Zettler, Erik Red	B-228-P	Linda Angela Amaral Zettler
Zhou, Meng	B-014-N	Edward G Durbin
Zhu, Xiaoshan NMI	B-014-N	Edward G Durbin
Zhu, Yiwu	B-014-N	Edward G Durbin
Zilic, Kyle	A-146-M	Shaul Hanany

Return to Index

Science Program Indexes 2012-2013

USAP Program Index:

Astrophysics and Geospace Sciences

Return to Index

Principal Investigator	Event No.	Project Title
Barwick, Steven	A-127-M	Development of hexagonal radio array for the ARIANNA ultra-high energy neutrino detector
Bieber, John	A-120-M	Cosmic ray observations at McMurdo Station
Bristow, William	A-369-M/S	McMurdo and South Pole SuperDARN: Investigation of the ionospheric dynamics and magnetosphere-ionosphere coupling in Antarctica
Carlstrom, John	A-379-S	Cosmological Research with the 10-meter South Pole Telescope
Chu, Xinzhao	A-130-M	Lidar Investigation of middle and upper atmosphere temperature, composition, chemistry, and dynamics at McMurdo, Antarctica
Clauer, C.	A-106-M/S	Collaborative Research: Polar Experiment Network for Geospace Upper-atmosphere Investigations: Interhemispheric investigations along the 40-degree magnetic meridian
Devlin, Mark	A-147-M	Balloon-borne Large Aperture Sub-millimeter Telescope (BLAST-POL)
Engebretson, Mark	A-102-M/S	Studies of solar wind - Magnetosphere interactions using observations of ULF waves at an extensive ground array at high latitudes
Evenson, Paul	A-118-S	Element composition of high-energy solar particles
Gill, John	A-336-P	ELF/VLF observation of whistler-mode waves, lightning discharge, and gamma-ray events from Palmer Station
Halzen, Francis	A-333-S	IceCube operations and

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

		maintenance
Hanany, Shaul	A-146-M	E & B Experiment (EBEX)
Hernandez, Gonzalo	A-110-M/S	Austral high-latitude atmospheric dynamics
Karle, Albrecht	A-107-S	Collaborative Research: MRI-R2 instrument development of the Askaryan Radio Array, a large-scale radio Cherenkov neutrino detector at the South Pole
Kovac, John	A-039-S	Collaborative Research: BICEP2 and SPUD - A search for inflation with degree-scale polarimetry from the South Pole
Kulesa, Craig	A-364-S	High Elevation Antarctic Terahertz (HEAT) telescopes for Dome A and Ridge A
LaBelle, James	A-128-S	Outstanding Questions on Auroral Radiation Fine Structure
LaBelle, James	A-125-S	Application of the AGO network to energy transfer in the radiation belts and remote sensing of auroral plasma processes
Mitchell, John	A-142-M	Super Trans-Iron Galactic Element Recorder (SuperTIGER)
Moore, Anna	A-356-S	Analysis of the data from the Gattini Antarctic camera network
Moore, Robert	A-109-M/P/S	Collaborative Research: Antarctic ELF/VLF observations of lightning and lightning-induced electron precipitation
Pryke, Clement	A-149-S	Collaborative Research: BICEP2 and SPUD - A search for inflation with degree-scale polarimetry from the South Pole
Romalis, Michael	A-103-S	Test of Lorentz invariance at the South Pole
Stepp, Bill	A-145-M	NASA Long Duration Balloon (LDB) support program
Weatherwax, Allan	A-111-M/S	Studies of the polar Ionosphere and Magnetosphere from measurements in Antarctica

Weatherwax, Allan	A-112-M	Polar experiment network for geospace upper-atmosphere investigations: PENGUIn - A high-latitude window to geospace dynamics
Wu, Qian	A-132-P	Thermospheric neutral wind observation in the Antarctica Peninsula

Return to Index

Science Program Indexes 2012-2013

USAP Program Index:

Organisms and Ecosystems

Return to Index

Principal Investigator	Event No.	Project Title
Ainley, David	B-031-M	Adelie Penguin response to climate change at the individual, colony and metapopulation levels
Ainley, David	B-042-M	COLLABORATIVE RESEARCH: Penguin foraging reveals phytoplankton spatial structure in the Ross Sea
Allen, Andrew	B-394-M	Synergistic effects of iron, carbon dioxide and temperature on the fate of nitrate: Implications for future changes in export production in the Southern Ocean
Amaral Zettler, Linda	B-228-P	Collaborative Research: Microbial Community Assembly in Coastal Waters of the Western Antarctic Peninsula
Bench, Shelley	B-018-P	PostDoctoral Research Fellowship
Buckley, Bradley	B-308-M	The cellular stress response in cold-adapted organisms: Building novel mechanistic links between heat stress, cell cycle arrest and apoptosis in Antarctic fishes.
Cheng, Chi-Hing Christina	B-010-L/M/P	Antarctic notothenioid fish freeze avoidance and genome-wide evolution for life in the cold
Costa, Daniel	B-232-M	Collaborative Research: Weddell seals as autonomous sensors of the winter oceanography of the Ross Sea
Doran, Peter	B-511-M	McMurdo LTER - Lakes: Increased connectivity in a polar desert resulting from climate warming: McMurdo Dry Valley LTER Program
Ducklow, Hugh	B-252-P	The seasonal cycle of export production in an Antarctic coastal marine ecosystem

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Ducklow, Hugh	B-045-L/P	Palmer Long Term Ecological Research (LTER): Looking back in time through marine ecosystem space, microbial ecology component
Durbin, Edward	B-014-N	Euphausia superba feeding using DNA analysis of gut contents
Fountain, Andrew	B-504-M	McMurdo LTER - Glaciers: Increased connectivity in a polar desert resulting from climate warming: McMurdo Dry Valleys LTER Program
Fraser, Bill	B-013-L/P	Palmer Long Term Ecological Research (LTER): Looking back in time through marine ecosystem space, apex predator component
Friedlaender, Ari	B-206-E	RAPID: Linking the movement patterns and foraging behavior of humpback whales to their prey across multiple spatial scales within the LTER study region
Hofmann, Gretchen	B-134-M	Ocean acidification: Integrated approaches to understanding effects on antarctic sea urchins, Sterechinus neumayeri
Kennicutt, Mahlon	B-518-M	Temporal variability in natural and anthropogenic disturbance of McMurdo Station
Kim, Stacy	B-174-M	Benthic-pelagic coupling in an intact ecosystem: The role of top predators in McMurdo Sound
Koch, Paul	B-225-M	Exploring the vulnerability of Southern Ocean pinnipeds to climate change - an integrated approach
Kooyman, Gerald	B-464-N	Pre- and post-molt biology of emperor penguins
Lyons, W. Berry	B-509-M	McMurdo LTER - Geochemistry: Increased connectivity in a polar desert resulting from climate warming: McMurdo Dry Valley LTER Program
Martinson, Doug	B-021-L	Palmer Long Term Ecological Research (LTER): Looking back in time through marine ecosystem space, physical oceanography

		component
McClintock, James	B-027-P	The effects of ocean acidification and rising sea surface temperatures on shallow-water benthic organisms in Antarctica
McKay, Christopher	B-302-M	IceBite: An auger and sampling systems for ground ice on Mars
McKnight, Diane	B-506-M	McMurdo LTER - Streams: Increased connectivity in a polar desert resulting from climate warming: McMurdo Dry Valley LTER Program
Mellish, Jo-Ann	B-470-M	Collaborative Research: Thermoregulation in free-living Antarctic seals: the missing link in effective ecological modeling
Morel, Francois	B-003-P	Collaborative Research: The seasonal dynamics of CO2, primary production, and DMS in the Western Antarctic Peninsula - Measurements of pools and processes using mass spectrometry
Morgan-Kiss, Rachael	B-247-M	CAREER: Protist diversity and function in the dry valley lakes
Naveen, Ron	B-044-E	Collaborative Research: Multispecies, multi-scale investigations of long-term changes in penguin and seabird populations on the Antarctic Peninsula
O'Brien, Kristin	B-036-L/P	Redox balance in Antarctic notothenioid fishes: Do icefishes have an advantage?
Place, Sean	B-199-M	Ocean acidification–category 1: Identifying adaptive responses of polar fishes in a vulnerable ecosystem
Ponganis, Paul	B-197-M	The physiological ecology of two Antarctic icons: Emperor penguins and leopard seals
Postlethwait, John	B-029-L/P	Developmental Mechanisms for the Evolution of Bone Loss
Priscu, John	B-505-M	McMurdo LTER - Lakes: Increased connectivity in a polar desert

		resulting from climate warming: McMurdo Dry Valley LTER Program
Rotella, Jay	B-009-M	The demographic consequences of environmental variability and individual heterogeneity in life-history tactics of a long-lived Antarctic marine predator
Schmidt, Britney	B-259-M	Astrobiology Science and Technology for Exploring Planets
Schofield, Oscar	B-019-L/P	Palmer Long Term Ecological Research (LTER): Looking back in time through marine ecosystem space, phytoplankton component
Steinberg, Deborah	B-020-L/P	Palmer Long Term Ecological Research (LTER): Looking back in time through marine ecosystem space, zooplankton component
Takacs-Vesbach, Cristina	B-330-M	An integrated ecological investigation of McMurdo Dry Valley's active soil microbial communities
Thurber, Andrew	B-004-M	Microbe-metazoan interactions in an Antarctic infaunal community
Wall, Diana	B-507-M	McMurdo LTER - Soils: Increased connectivity in a polar desert resulting from climate warming: McMurdo Dry Valley LTER Program
Watters, George	B-006-N	NOAA/AMLR Cruise

Return to Index

Science Program Indexes 2012-2013

USAP Program Index:

Earth Sciences

Return to Index

Principal Investigator	Event No.	Project Title
Anderson, Kent	G-090-P/S	Global seismograph station at South Pole and Palmer Station
Anderson, Kent	G-090-P/S	Global seismograph station at South Pole and Palmer Stations
Barbeau, David	G-432-E	COLLABORATIVE RESEARCH: EAGER: Evaluating the suitability of the Larsen basin for testing the Cretaceous glaciation hypothesis
Blankenship, Donald	G-098-M	International cryospheric exploration through collaborative aerogeophysical profiling/Operation Ice Bridge (OIB)
Bockheim, James	G-239-P	Impact of recent climate warming on active-layer dynamics, permafrost, and soil properties on the western Antarctic Peninsula
Cottle, John	G-064-M	Exploring the significance of NA-alkaline magmatism in subduction systems, a case study from the Ross Orogen
Hansen, Samantha	G-061-M	CAREER: Deciphering the tectonic history of the Transantarctic Mountains and the Wilkes Subglacial Basin
Harvey, Ralph	G-058-M	Antarctic Search for Meteorites (ANSMET)
Harvey, Ralph	G-057-M	The Antarctic Search for Meteorites (ANSMET): Reconnaissance team
Kemerait, Robert	G-078-M	Dry Valley seismic project
Lamanna, Matthew	G-182-E	Late Cretaceous-Paleogene vertebrates from Antarctica: Implications for paleobiogeography, paleoenvironment, and extinction in Polar Gondwana

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Levy, Joseph	G-084-M	Cryptic hydrology of the McMurdo Dry Valleys: Water track contributions to water and geochemical budgets in Taylor Valley, Antarctica
Levy, Joseph	G-080-M	Rapid landscape change in Garwood Valley: Monitoring buried glacier melt and exploring “Péwé’s Lost Lake”
Marchant, David	G-054-M	Quantifying surface processes above buried ice in Antarctica: Implications for terrestrial climate change and glaciation on Mars
Sims, Kenneth	G-092-M	A geochemical study of the nature and evolution of mantle upwelling beneath Ross Island and its relationship to tectonics in the West Antarctic Rift System
Staudigel, Hubert	G-439-M	Collaborative research: Microbially mediated alteration of volcanic glass using McMurdo extreme environments as natural laboratories
Taylor, Edith	G-496-M	Life in a volcanic landscape: Early Jurassic paleoenvironments and paleobotany
Wiens, Douglas	G-089-M/S	Polenet East: An international seismological network for East Antarctica
Wilson, Terry	G-079-M	Collaborative research, IPY POLENET-Antarctica: Investigating links between geodynamics and ice sheets
Young, Duncan	G-099-M	Geophysical Investigation of Marie Byrd Land Lithospheric Evolution -- GIMBLE

Return to Index

Science Program Indexes 2012-2013

USAP Program Index:

Glaciology

Return to Index

Principal Investigator	Event No.	Project Title
Clark, Peter	I-311-M	Collaborative Research: Dating and modeling the last deglaciation of the Ross Sea sector of the West Antarctic Ice Sheet
Conway, Howard	I-209-M	Deglaciation of the Ross Sea Embayment - constraints from Roosevelt Island
Conway, Howard	I-210-M	East Antarctic outlet glacier dynamics
Mayewski, Paul	I-173-M	Roosevelt Island Climate Evolution (RICE) project
Severinghaus, Jeffrey	I-476-M	Collaborative Research: Replicate coring at WAIS Divide to obtain additional samples at events of high scientific interest
Stearns, Leigh	I-351-M	Collaborative Research: Byrd Glacier flow dynamics
Stone, John	I-414-M	Glacial-interglacial history of West Antarctic nunataks and site reconnaissance for subglacial bedrock sampling
Taylor, Kendrick	I-477-M	WAIS Divide Science Coordination Office (SCO)

Return to Index

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Science Program Indexes 2012-2013

USAP Program Index:

Ocean and Atmospheric Sciences

Return to Index

Principal Investigator	Event No.	Project Title
Cassano, John	O-240-M	Collaborative Research: Ocean-ice-atmosphere interactions in the Terra Nova Bay polynya
Cassar, Nicolas	O-405-L	Physiological and ecosystem structure forcings on carbon fluxes in the Southern Ocean mixed layer
Chereskin, Teresa	O-317-L/N	Collaborative research: Southern Ocean current observations from the U.S. Antarctic research vessels
Corbett, David	O-176-L/P	Submarine groundwater and freshwater inputs along the Western Antarctic Peninsula
Emerson, Steven	O-254-L	Noble gases in the Drake Passage aboard the ARSV Laurence M. Gould
Firing, Eric	O-317-L/N	Collaborative research: Southern Ocean current observations from the U.S. Antarctic research vessels
Hansell, Dennis	O-309-N	Collaborative Research: TRacing the fate of Algal Carbon Export in the Ross Sea (TRACERS)
Helmig, Detlev	O-233-M	Reactive gas chemistry in the Dome C snowpack and its influence on surface-layer chemistry and ice-core records
Holland, David	O-286-M	Collaborative Research: Application of distributed temperature sensors (DTS) for Antarctic ice shelves and cavities
Kalnajs, Lars	O-324-M	Augmenting the Ross Island-area automatic weather station network to develop a tropospheric ozone climatology
Lazzara, Matt	O-283-M	Antarctic Automatic Weather Station (AWS) program

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Ledwell, James	O-124-L	Studies of turbulence and mixing in the Antarctic Circumpolar Current, a continuation of DIMES
Leonard, Katherine	O-242-E	Role of snow distribution processes in Antarctic sea ice mass balance
Lubin, Dan	O-314-M	Antarctic Cloud Physics: Fundamental Observations from Ross Island
Miller, Scott	O-278-N	Air-sea fluxes of momentum, heat, and carbon dioxide at high wind speeds in the Southern Ocean
Obbard, Rachel	O-263-M	Bromide in snow in the sea ice zone
Sprintall, Janet	O-260-L	The Drake Passage high-density XBT/XCTD program
Sweeney, Colm	O-214-L	Collaborative research: Biogeochemical controls of the oxygen and carbon system in the Drake Passage
Warren, Stephen	O-201-E	Spectral and broadband albedo of Antarctic sea-ice types
Yuan, Xiaojun	O-261-N	Collaborative Research: Sampling the ocean - sea ice interaction in the Pacific center of the Antarctic Dipole

Return to Index

Science Program Indexes 2012-2013

USAP Program Index:

Integrated System Science

Return to Index

Principal Investigator	Event No.	Project Title
Bindschadler, Robert	C-407-M	IPY: Collaborative Research: Ocean-ice sheet interaction in the Amundsen Sea: The keystone of West Antarctic stability
Domack, Eugene	C-515-E/L	LARISSA Project participation RVIB Araon Cruise in 2013
Domack, Eugene	C-515-E/L	Continuation of the LARISSA continuous GPS network in view of observed dynamic response to Antarctic Peninsula mass balance and required geologic constraints
Powell, Ross	C-522-M	Integrative study of marine ice sheet stability and subglacial life habitats - Robotic Access to Grounding-zones for Exploration and Science (RAGES)
Priscu, John	C-523-M	GeomicroBiology of Antarctic Subglacial Environments (GBASE) beneath the Mercer and Whillans ice streams
Rack, Frank	C-524-M	WISSARD borehole drill contractor
Scambos, Theodore	C-514-E	Collaborative Research in IPY: Abrupt Environmental Change in the Larsen Ice Shelf System, a Multi-disciplinary Approach -- Cryosphere and Oceans (LARISSA)
Schwartz, Susan	C-525-M	Investigating (un)stable sliding of Whillians Ice Stream and subglacial water dynamics using borehole seismology: A component of the Whillans Ice Stream Subglacial Access Research Drilling (WISSARD) Project

Return to Index

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Science Program Indexes 2012-2013

USAP Program Index:

Artists and Writers

Return to Index

Principal Investigator	Event No.	Project Title
Min, Larissa	W-491-M	Wondering Gondwana
Tuft, Diane	W-493-M	The hidden light of Antarctica

Return to Index

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Science Program Indexes 2012-2013

USAP Program Index:

Education and Outreach

Return to Index

Principal Investigator	Event No.	Project Title
Warburton, Janet	Y-606-M	PolarTREC

Return to Index

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Science Program Indexes 2012-2013

USAP Station Index:

Amundsen-Scott South Pole Station

Return to Index

Principal Investigator	Event No.	Project Title
Anderson, Kent	G-090-P/S	Global seismograph station at South Pole and Palmer Station
Anderson, Kent	G-090-P/S	Global seismograph station at South Pole and Palmer Stations
Bristow, William	A-369-M/S	McMurdo and South Pole SuperDARN: Investigation of the ionospheric dynamics and magnetosphere-ionosphere coupling in Antarctica
Carlstrom, John	A-379-S	Cosmological Research with the 10-meter South Pole Telescope
Clauer, C.	A-106-M/S	Collaborative Research: Polar Experiment Network for Geospace Upper-atmosphere Investigations: Interhemispheric investigations along the 40-degree magnetic meridian
Engebretson, Mark	A-102-M/S	Studies of solar wind - Magnetosphere interactions using observations of ULF waves at an extensive ground array at high latitudes
Evenson, Paul	A-118-S	Element composition of high-energy solar particles
Halzen, Francis	A-333-S	IceCube operations and maintenance
Hernandez, Gonzalo	A-110-M/S	Austral high-latitude atmospheric dynamics
Karle, Albrecht	A-107-S	Collaborative Research: MRI-R2 instrument development of the Askaryan Radio Array, a large-scale radio Cherenkov neutrino detector at the South Pole
Kovac, John	A-039-S	Collaborative Research: BICEP2 and SPUD - A search for inflation with degree-scale polarimetry from the South Pole

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Kulesa, Craig	A-364-S	High Elevation Antarctic Terahertz (HEAT) telescopes for Dome A and Ridge A
LaBelle, James	A-128-S	Outstanding Questions on Auroral Radiation Fine Structure
LaBelle, James	A-125-S	Application of the AGO network to energy transfer in the radiation belts and remote sensing of auroral plasma processes
Moore, Anna	A-356-S	Analysis of the data from the Gattini Antarctic camera network
Moore, Robert	A-109-M/P/S	Collaborative Research: Antarctic ELF/VLF observations of lightning and lightning-induced electron precipitation
Pryke, Clement	A-149-S	Collaborative Research: BICEP2 and SPUD - A search for inflation with degree-scale polarimetry from the South Pole
Romalis, Michael	A-103-S	Test of Lorentz invariance at the South Pole
Weatherwax, Allan	A-111-M/S	Studies of the polar Ionosphere and Magnetosphere from measurements in Antarctica
Wiens, Douglas	G-089-M/S	Polenet East: An international seismological network for East Antarctica

Return to Index

Science Program Indexes 2012-2013

USAP Station Index:

McMurdo Station

Return to Index

Principal Investigator	Event No.	Project Title
Ainley, David	B-031-M	Adelie Penguin response to climate change at the individual, colony and metapopulation levels
Ainley, David	B-042-M	COLLABORATIVE RESEARCH: Penguin foraging reveals phytoplankton spatial structure in the Ross Sea
Allen, Andrew	B-394-M	Synergistic effects of iron, carbon dioxide and temperature on the fate of nitrate: Implications for future changes in export production in the Southern Ocean
Barwick, Steven	A-127-M	Development of hexagonal radio array for the ARIANNA ultra-high energy neutrino detector
Bentley, Charles	T-350-M	Ice Coring and Drilling Services (ICDS) support for WAIS Divide
Bieber, John	A-120-M	Cosmic ray observations at McMurdo Station
Bindschadler, Robert	C-407-M	IPY: Collaborative Research: Ocean-ice sheet interaction in the Amundsen Sea: The keystone of West Antarctic stability
Blankenship, Donald	G-098-M	International cryospheric exploration through collaborative aerogeophysical profiling/Operation Ice Bridge (OIB)
Bristow, William	A-369-M/S	McMurdo and South Pole SuperDARN: Investigation of the ionospheric dynamics and magnetosphere-ionosphere coupling in Antarctica
Buckley, Bradley	B-308-M	The cellular stress response in cold-adapted organisms: Building novel mechanistic links between heat stress, cell cycle arrest and apoptosis in Antarctic fishes.

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Carpenter, Paul	T-299-M	IRIS/PASSCAL seismic support
Cassano, John	O-240-M	Collaborative Research: Ocean-ice-atmosphere interactions in the Terra Nova Bay polynya
Cheng, Chi-Hing Christina	B-010-L/M/P	Antarctic notothenioid fish freeze avoidance and genome-wide evolution for life in the cold
Chu, Xinzhao	A-130-M	Lidar Investigation of middle and upper atmosphere temperature, composition, chemistry, and dynamics at McMurdo, Antarctica
Clark, Peter	I-311-M	Collaborative Research: Dating and modeling the last deglaciation of the Ross Sea sector of the West Antarctic Ice Sheet
Clauer, C.	A-106-M/S	Collaborative Research: Polar Experiment Network for Geospace Upper-atmosphere Investigations: Interhemispheric investigations along the 40-degree magnetic meridian
Comberiate, Mike	T-966-M	TDRSS and NAILS
Conway, Howard	I-209-M	Deglaciation of the Ross Sea Embayment - constraints from Roosevelt Island
Conway, Howard	I-210-M	East Antarctic outlet glacier dynamics
Costa, Daniel	B-232-M	Collaborative Research: Weddell seals as autonomous sensors of the winter oceanography of the Ross Sea
Cottle, John	G-064-M	Exploring the significance of NA-alkaline magmatism in subduction systems, a case study from the Ross Orogen
Crocker, Brian	T-500-M	T-500-O
Devlin, Mark	A-147-M	Balloon-borne Large Aperture Sub-millimeter Telescope (BLAST-POL)
Doran, Peter	B-511-M	McMurdo LTER - Lakes: Increased connectivity in a polar desert resulting from climate warming: McMurdo Dry Valley LTER Program
Engebretson, Mark	A-102-M/S	Studies of solar wind - Magnetosphere interactions using observations of ULF

		waves at an extensive ground array at high latitudes
Fountain, Andrew	B-504-M	McMurdo LTER - Glaciers: Increased connectivity in a polar desert resulting from climate warming: McMurdo Dry Valleys LTER Program
Hanany, Shaul	A-146-M	E & B Experiment (EBEX)
Hansen, Samantha	G-061-M	CAREER: Deciphering the tectonic history of the Transantarctic Mountains and the Wilkes Subglacial Basin
Harvey, Ralph	G-058-M	Antarctic Search for Meteorites (ANSMET)
Harvey, Ralph	G-057-M	The Antarctic Search for Meteorites (ANSMET): Reconnaissance team
Helmig, Detlev	O-233-M	Reactive gas chemistry in the Dome C snowpack and its influence on surface-layer chemistry and ice-core records
Hernandez, Gonzalo	A-110-M/S	Austral high-latitude atmospheric dynamics
Hofmann, Gretchen	B-134-M	Ocean acidification: Integrated approaches to understanding effects on antarctic sea urchins, Sterechinus neumayeri
Holland, David	O-286-M	Collaborative Research: Application of distributed temperature sensors (DTS) for Antarctic ice shelves and cavities
Kalnajs, Lars	O-324-M	Augmenting the Ross Island-area automatic weather station network to develop a tropospheric ozone climatology
Kemerait, Robert	G-078-M	Dry Valley seismic project
Kennicutt, Mahlon	B-518-M	Temporal variability in natural and anthropogenic disturbance of McMurdo Station
Kim, Stacy	B-174-M	Benthic-pelagic coupling in an intact ecosystem: The role of top predators in McMurdo Sound
Koch, Paul	B-225-M	Exploring the vulnerability of Southern Ocean pinnipeds to climate change - an integrated approach

Lazzara, Matt	O-283-M	Antarctic Automatic Weather Station (AWS) program
Levy, Joseph	G-084-M	Cryptic hydrology of the McMurdo Dry Valleys: Water track contributions to water and geochemical budgets in Taylor Valley, Antarctica
Levy, Joseph	G-080-M	Rapid landscape change in Garwood Valley: Monitoring buried glacier melt and exploring “Péwé’s Lost Lake”
Lubin, Dan	O-314-M	Antarctic Cloud Physics: Fundamental Observations from Ross Island
Lyons, W. Berry	B-509-M	McMurdo LTER - Geochemistry: Increased connectivity in a polar desert resulting from climate warming: McMurdo Dry Valley LTER Program
Marchant, David	G-054-M	Quantifying surface processes above buried ice in Antarctica: Implications for terrestrial climate change and glaciation on Mars
Mayewski, Paul	I-173-M	Roosevelt Island Climate Evolution (RICE) project
McKay, Christopher	B-302-M	IceBite: An auger and sampling systems for ground ice on Mars
McKnight, Diane	B-506-M	McMurdo LTER - Streams: Increased connectivity in a polar desert resulting from climate warming: McMurdo Dry Valley LTER Program
Melendy, Renee	T-940-M	CRREL 09-10 activities
Mellish, Jo-Ann	B-470-M	Collaborative Research: Thermoregulation in free-living Antarctic seals: the missing link in effective ecological modeling
Min, Larissa	W-491-M	Wondering Gondwana
Mitchell, John	A-142-M	Super Trans-Iron Galactic Element Recorder (SuperTIGER)
Moore, Robert	A-109-M/P/S	Collaborative Research: Antarctic ELF/VLF observations of lightning and lightning-induced electron precipitation
Morgan-Kiss, Rachael	B-247-M	CAREER: Protist diversity and function in the dry valley lakes
Morin, Paul	T-434-M	The Polar Geospatial Information

		Center: Joint support
Obbard, Rachel	O-263-M	Bromide in snow in the sea ice zone
Pettit, Joseph	T-295-M	UNAVCO GPS survey support
Place, Sean	B-199-M	Ocean acidification–category 1: Identifying adaptive responses of polar fishes in a vulnerable ecosystem
Ponganis, Paul	B-197-M	The physiological ecology of two Antarctic icons: Emperor penguins and leopard seals
Powell, Ross	C-522-M	Integrative study of marine ice sheet stability and subglacial life habitats - Robotic Access to Grounding-zones for Exploration and Science (RAGES)
Priscu, John	C-523-M	GeomicroBiology of Antarctic Subglacial Environments (GBASE) beneath the Mercer and Whillans ice streams
Priscu, John	B-505-M	McMurdo LTER - Lakes: Increased connectivity in a polar desert resulting from climate warming: McMurdo Dry Valley LTER Program
Rack, Frank	C-524-M	WISSARD borehole drill contractor
Rotella, Jay	B-009-M	The demographic consequences of environmental variability and individual heterogeneity in life-history tactics of a long-lived Antarctic marine predator
Schmidt, Britney	B-259-M	Astrobiology Science and Technology for Exploring Planets
Schwartz, Susan	C-525-M	Investigating (un)stable sliding of Whillians Ice Stream and subglacial water dynamics using borehole seismology: A component of the Whillans Ice Stream Subglacial Access Research Drilling (WISSARD) Project
Severinghaus, Jeffrey	I-476-M	Collaborative Research: Replicate coring at WAIS Divide to obtain additional samples at events of high scientific interest
Sims, Kenneth	G-092-M	A geochemical study of the nature and evolution of mantle upwelling beneath Ross Island and its

		relationship to tectonics in the West Antarctic Rift System
Staudigel, Hubert	G-439-M	Collaborative research: Microbially mediated alteration of volcanic glass using McMurdo extreme environments as natural laboratories
Stearns, Leigh	I-351-M	Collaborative Research: Byrd Glacier flow dynamics
Stepp, Bill	A-145-M	NASA Long Duration Balloon (LDB) support program
Stone, John	I-414-M	Glacial-interglacial history of West Antarctic nunataks and site reconnaissance for subglacial bedrock sampling
Szuberla, Curt	T-396-M	Installation of a CTBT class infrasound station
Takacs-Vesbach, Cristina	B-330-M	An integrated ecological investigation of McMurdo Dry Valley's active soil microbial communities
Taylor, Edith	G-496-M	Life in a volcanic landscape: Early Jurassic paleoenvironments and paleobotany
Taylor, Kendrick	I-477-M	WAIS Divide Science Coordination Office (SCO)
Thoman, Bruce	T-927-M	NASA/McMurdo Ground Station (MG1)
Thurber, Andrew	B-004-M	Microbe-metazoan interactions in an Antarctic infaunal community
Tuft, Diane	W-493-M	The hidden light of Antarctica
Wall, Diana	B-507-M	McMurdo LTER - Soils: Increased connectivity in a polar desert resulting from climate warming: McMurdo Dry Valley LTER Program
Warburton, Janet	Y-606-M	PolarTREC
Weatherwax, Allan	A-111-M/S	Studies of the polar Ionosphere and Magnetosphere from measurements in Antarctica
Weatherwax, Allan	A-112-M	Polar experiment network for geospace upper-atmosphere investigations: PENGUIn - A high-latitude window to geospace dynamics

Wiens, Douglas	G-089-M/S	Polenet East: An international seismological network for East Antarctica
Wilson, Terry	G-079-M	Collaborative research, IPY POLENET-Antarctica: Investigating links between geodynamics and ice sheets
Young, Duncan	G-099-M	Geophysical Investigation of Marie Byrd Land Lithospheric Evolution -- GIMBLE

Return to Index

Science Program Indexes 2012-2013

USAP Station Index:

Palmer Station

Return to Index

Principal Investigator	Event No.	Project Title
Amaral Zettler, Linda	B-228-P	Collaborative Research: Microbial Community Assembly in Coastal Waters of the Western Antarctic Peninsula
Anderson, Kent	G-090-P/S	Global seismograph station at South Pole and Palmer Station
Anderson, Kent	G-090-P/S	Global seismograph station at South Pole and Palmer Stations
Bench, Shelley	B-018-P	PostDoctoral Research Fellowship
Bockheim, James	G-239-P	Impact of recent climate warming on active-layer dynamics, permafrost, and soil properties on the western Antarctic Peninsula
Cheng, Chi-Hing Christina	B-010-L/M/P	Antarctic notothenioid fish freeze avoidance and genome-wide evolution for life in the cold
Corbett, David	O-176-L/P	Submarine groundwater and freshwater inputs along the Western Antarctic Peninsula
Ducklow, Hugh	B-252-P	The seasonal cycle of export production in an Antarctic coastal marine ecosystem
Ducklow, Hugh	B-045-L/P	Palmer Long Term Ecological Research (LTER): Looking back in time through marine ecosystem space, microbial ecology component
Fraser, Bill	B-013-L/P	Palmer Long Term Ecological Research (LTER): Looking back in time through marine ecosystem space, apex predator component
Gill, John	A-336-P	ELF/VLF observation of whistler-mode waves, lightning discharge, and gamma-ray events from Palmer Station

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Hosticka, Bouvard	T-998-P	Operation and maintenance of a CTBT radionuclide monitoring station at Palmer Station
McClintock, James	B-027-P	The effects of ocean acidification and rising sea surface temperatures on shallow-water benthic organisms in Antarctica
Moore, Robert	A-109-M/P/S	Collaborative Research: Antarctic ELF/VLF observations of lightning and lightning-induced electron precipitation
Morel, Francois	B-003-P	Collaborative Research: The seasonal dynamics of CO2, primary production, and DMS in the Western Antarctic Peninsula - Measurements of pools and processes using mass spectrometry
O'Brien, Kristin	B-036-L/P	Redox balance in Antarctic notothenioid fishes: Do icefishes have an advantage?
Postlethwait, John	B-029-L/P	Developmental Mechanisms for the Evolution of Bone Loss
Schofield, Oscar	B-019-L/P	Palmer Long Term Ecological Research (LTER): Looking back in time through marine ecosystem space, phytoplankton component
Steinberg, Deborah	B-020-L/P	Palmer Long Term Ecological Research (LTER): Looking back in time through marine ecosystem space, zooplankton component
Wu, Qian	A-132-P	Thermospheric neutral wind observation in the Antarctica Peninsula

Return to Index

Science Program Indexes 2012-2013

USAP Station Index:

RVIB Nathaniel B. Palmer

Return to Index

Principal Investigator	Event No.	Project Title
Chereskin, Teresa	O-317-L/N	Collaborative research: Southern Ocean current observations from the U.S. Antarctic research vessels
Durbin, Edward	B-014-N	Euphausia superba feeding using DNA analysis of gut contents
Firing, Eric	O-317-L/N	Collaborative research: Southern Ocean current observations from the U.S. Antarctic research vessels
Hansell, Dennis	O-309-N	Collaborative Research: TRacing the fate of Algal Carbon Export in the Ross Sea (TRACERS)
Kooyman, Gerald	B-464-N	Pre- and post-molt biology of emperor penguins
Miller, Scott	O-278-N	Air-sea fluxes of momentum, heat, and carbon dioxide at high wind speeds in the Southern Ocean
Watters, George	B-006-N	NOAA/AMLR Cruise
Yuan, Xiaojun	O-261-N	Collaborative Research: Sampling the ocean - sea ice interaction in the Pacific center of the Antarctic Dipole

Return to Index

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Science Program Indexes 2012-2013

USAP Station Index:

ARSV Laurence M. Gould

Return to Index

Principal Investigator	Event No.	Project Title
Cassar, Nicolas	O-405-L	Physiological and ecosystem structure forcings on carbon fluxes in the Southern Ocean mixed layer
Cheng, Chi-Hing Christina	B-010-L/M/P	Antarctic notothenioid fish freeze avoidance and genome-wide evolution for life in the cold
Chereskin, Teresa	O-317-L/N	Collaborative research: Southern Ocean current observations from the U.S. Antarctic research vessels
Corbett, David	O-176-L/P	Submarine groundwater and freshwater inputs along the Western Antarctic Peninsula
Domack, Eugene	C-515-E/L	LARISSA Project participation RVIB Araon Cruise in 2013
Domack, Eugene	C-515-E/L	Continuation of the LARISSA continuous GPS network in view of observed dynamic response to Antarctic Peninsula mass balance and required geologic constraints
Ducklow, Hugh	B-045-L/P	Palmer Long Term Ecological Research (LTER): Looking back in time through marine ecosystem space, microbial ecology component
Emerson, Steven	O-254-L	Noble gases in the Drake Passage aboard the ARSV Laurence M. Gould
Firing, Eric	O-317-L/N	Collaborative research: Southern Ocean current observations from the U.S. Antarctic research vessels
Fraser, Bill	B-013-L/P	Palmer Long Term Ecological Research (LTER): Looking back in time through marine ecosystem space, apex predator component
Ledwell, James	O-124-L	Studies of turbulence and mixing in the Antarctic Circumpolar Current, a continuation of DIMES

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Martinson, Doug	B-021-L	Palmer Long Term Ecological Research (LTER): Looking back in time through marine ecosystem space, physical oceanography component
O'Brien, Kristin	B-036-L/P	Redox balance in Antarctic notothenioid fishes: Do icefishes have an advantage?
Postlethwait, John	B-029-L/P	Developmental Mechanisms for the Evolution of Bone Loss
Schofield, Oscar	B-019-L/P	Palmer Long Term Ecological Research (LTER): Looking back in time through marine ecosystem space, phytoplankton component
Sprintall, Janet	O-260-L	The Drake Passage high-density XBT/XCTD program
Steinberg, Deborah	B-020-L/P	Palmer Long Term Ecological Research (LTER): Looking back in time through marine ecosystem space, zooplankton component
Sweeney, Colm	O-214-L	Collaborative research: Biogeochemical controls of the oxygen and carbon system in the Drake Passage

Return to Index

Science Program Indexes 2012-2013

USAP Station Index:

Special Projects

Return to Index

Principal Investigator	Event No.	Project Title
Barbeau, David	G-432-E	COLLABORATIVE RESEARCH: EAGER: Evaluating the suitability of the Larsen basin for testing the Cretaceous glaciation hypothesis
Dolk, Shaun	X-592-E	NOAA's Global Drifter Program (GDP)
Domack, Eugene	C-515-E/L	LARISSA Project participation RVIB Araon Cruise in 2013
Domack, Eugene	C-515-E/L	Continuation of the LARISSA continuous GPS network in view of observed dynamic response to Antarctic Peninsula mass balance and required geologic constraints
Friedlaender, Ari	B-206-E	RAPID: Linking the movement patterns and foraging behavior of humpback whales to their prey across multiple spatial scales within the LTER study region
Lamanna, Matthew	G-182-E	Late Cretaceous-Paleogene vertebrates from Antarctica: Implications for paleobiogeography, paleoenvironment, and extinction in Polar Gondwana
Leonard, Katherine	O-242-E	Role of snow distribution processes in Antarctic sea ice mass balance
Naveen, Ron	B-044-E	Collaborative Research: Multispecies, multi-scale investigations of long-term changes in penguin and seabird populations on the Antarctic Peninsula
Scambos, Theodore	C-514-E	Collaborative Research in IPY: Abrupt Environmental Change in the Larsen Ice Shelf System, a Multi-disciplinary Approach -- Cryosphere and Oceans (LARISSA)
Warren, Stephen	O-201-E	Spectral and broadband albedo of Antarctic sea-ice types

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Return to Index

Project Details 2012-2013

Adelie Penguin Response To Climate Change At The Individual, Colony And Metapopulation Levels

Program Manager:
Dr. Charles Amsler

Event Number: B-031-M
NSF/PLR Award 0944411

ASC POC/Implementer:
Leslie Blank / Jessica Jenkins

Dr. David Ainley (Principal Investigator)
dainley@penguinscience.com
http://www.penguinscience.com

H.T. Harvey & Associates
Los Gatos, California

Supporting Stations: McMurdo Station
Research Locations: Beaufort Island / Capes Bird, Crozier, and Royds / Franklin Island / Inexpressible Island

Project Description:

Since 1996, this study has involved novel technology and experimentation including natural experiments and long hours finding banded birds at three colonies of widely disparate sizes occurring in a metapopulation. While changes in populations typically are tracked to gauge response to climate or habitat change, the process actually involves the response of individuals as each copes with an altered environment. During this study spanning 15 breeding seasons, researchers have found that 20 percent of individuals within a colony successfully raise offspring, and that they do so because of exemplary foraging proficiency. Moreover, foraging requires more effort at the largest colony, where intra-specific competition is higher than at small colonies, and requires more proficiency during periods of environmental stress (e.g., anomalous sea-ice conditions). Not only is breeding success and eventual recruitment involved in this species' response to environmental change, but, when conditions are particularly daunting, so is emigration as it dramatically increases, countering the long-standing assumption that Adélie penguins are highly philopatric. This project is a collaboration of six co-PIs from the US, New Zealand and France and will continue the outreach and education program, including webisodes and PenguinScience.com.

Field Season Overview:

Eleven field team members will deploy camps to Capes Crozier and Royds,

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

and will make day trips to Cape Bird and, depending on sea ice conditions, Beaufort Island. The field work from late October to early February spans the Adelie nesting season. On foot, team members will look for penguins previously banded as chicks to collect data and log their breeding status. To investigate foraging as it affects breeding effort, researchers will deploy time-depth-recorders at each site. Computerized weighbridges will continue to log trip duration and food loads. This species of penguin does not mature until 3-8 years of age, thus, even after 15 years researchers are just beginning to see breeders among the birds banded as chicks. This project will also collaborate with Stacy Kim (B-174-M) and Walker Smith/Vern Asper (B-042) by attaching instruments to additional penguins.

Deploying Team Members:

- David Ainley (PI)
- Katie Dugger (Co-PI)
- Peter Kappes
- Kirsten Lindquist
- Melanie Massaro
- Jean Pennycook (Team Leader)
- Anne Pollard
- Elizabeth Porzig
- Yasuko Suzuki

Return to Index

Project Details 2012-2013

COLLABORATIVE RESEARCH: Penguin Foraging Reveals Phytoplankton Spatial Structure In The Ross Sea

Program Manager:
Dr. Diana Nemergut

Event Number: B-042-M

ASC POC/Implementer:
Addie Coyac / Jessica Jenkins

Dr. David Ainley (Principal Investigator)
dainley@penguinscience.com
http://www.penguinscience.com

H.T. Harvey & Associates
Los Gatos, California

Supporting Stations: McMurdo Station
Research Locations: Lewis Bay, Ross Sea

Project Description:

Field Season Overview:

Researchers will use an autonomous glider, satellite imagery of chlorophyll blooms, and 3-dimensional penguin tracking. They hope to deploy the glider near Lewis Bay, but that will depend on sea ice conditions. The deployment will occur between 10-28 Nov, and recovery will be in February. Project personnel will not remain on site between those periods.The recovery of the glider can only be accomplished from a large vessel such as the Nathaniel B Palmer (NBP) which will be in the area early February. No other recovery operation will be attempted as McMurdo Station does not have the resources to support either sea ice edge recovery or land recovery. A CTD will be cast at the recovery site from the NBP and water will be recovered. The data from that CTD will be put on DVD and given to the scientist on station. The scientist on station will prepare the glider for return shipment to the US.

Deploying Team Members:

- David Ainley (PI)
- Vernon Asper (Co-PI)
- Randolph Jones

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

- Walker Smith (Co-PI)
- Arvind Varsani

Return to Index

Project Details 2012-2013

Global Seismograph Station At South Pole And Palmer Stations

Program Manager:
Dr. Alexandra Isern

Event Number: G-090-P/S
NSF/EAR 1261681

ASC POC/Implementer:
Leslie Blank / Paul Sullivan

Mr. Kent Anderson (Principal Investigator)
kent@iris.edu
http://www.iris.edu/hq/

United States Geological Survey
Albuquerque Seismological Labratory
Sandia Park, New Mexico

Supporting Stations: Palmer Station, South Pole Station
Research Locations: TerraLab / Seismic Vault, Quiet Sector

Project Description:

The Incorporated Research Institutions for Seismology (IRIS) is a university consortium sponsored by the NSF and dedicated to the operation of scientific facilities for the acquisition, management and distribution of freely available seismic data. This project is a long-term study of seismicity and is part of IRIS's 120+ station Global Seismographic Network (GSN). Seismic stations at Palmer Station and at the Amundsen-Scott South Pole Station are named PMSA and QSPA, respectively. Recently, the South Pole seismic station was moved from the V1 vault (near the old dome site) to SPRESSO to reduce station related "cultural" noise. The move has made QSPA the most-quiet seismic station in the entire GSN. Lower background noise levels will allow researchers to see smaller events from further away and help identify and characterize Antarctic seismicity.

Field Season Overview:

At Palmer Station, the support contractor's science technician will perform year around, daily, data tape changes and periodic maintenance of the project's seismometers. The station's data acquisition system is maintained by US-based researchers via the Internet.

At the South Pole, the support contractor's science technician calibrates the gravity meters and performs daily operations and maintenance tasks. This

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

year two IRIS technicians will deploy to perform required modification to the STS-2.5 seismometer. Technicians will also investigate long period noise observed on the KS54000 seismometer.

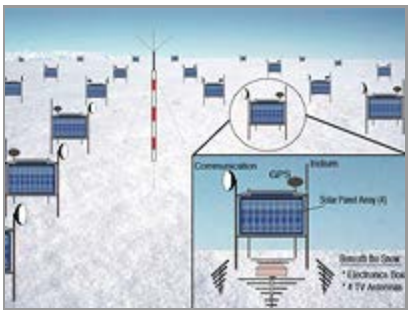
Deploying Team Members:

- Edward Kromer
- Edward Kromer

Return to Index

Project Details 2012-2013

Development Of Hexagonal Radio Array For The ARIANNA Ultra-High Energy Neutrino Detector



Program Manager:
Dr. Vladimir Papitashvili

Event Number: A-127-M
NSF/PLR Award 0970175 / 1126672

ASC POC/Implementer:
Elizabeth Watson / Jessica Jenkins

Dr. Steven Barwick (Principal Investigator)
barwick@cosmic.ps.uci.edu
http://arianna.ps.uci.edu/

University of California Irvine
Department of Physics and Astronomy
Irvine, California

Supporting Stations: McMurdo Station
Research Locations: ARIANNA site at Moore's Bay

Project Description:

The idea of using a surface array of radio receivers to search for astrophysical sources has a long history. The ARIANNA concept utilizes the Ross Ice Shelf near the coast of Antarctica to increase the sensitivity to ultra-high-energy cosmogenic neutrinos by roughly an order of magnitude when compared to the sensitivity of existing detectors and those under construction. Therefore, ARIANNA can test a wide variety of scenarios for neutrino production and probe for physics beyond the standard model by measuring the neutrino cross-section at center of mass energies near 100 Tera-electron-Volts. ARIANNA capitalizes on several remarkable properties of the Ross Ice Shelf: Shelf ice is now measured to be relatively transparent to electromagnetic radiation at the radio frequencies of interest; and the water-ice boundary below the shelf behaves like a mirror that reflects radio signals from downgoing neutrinos back up to the surface antennas. The ability to operate continuously for nearly six months (or possibly more with the addition of wind power), the low energy threshold (~3x1017 electron-Volts), and a field of view of more than half the sky, combine to make ARIANNA a highly sensitive neutrino detector.

Field Season Overview:

Three field team members will deploy to McMurdo station and install three stations at Moore's Bay on the Ross Ice Shelf, about 65 miles from

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

McMurdo. The baseline concept consists of moderately high gain antenna stations arranged on a 100 x 100 square grid, separated by about 300 meters. Each station consists of eight linearly-polarized log-periodic dipole antennas (LPDA) to detect the radio signals generated by the neutrino interactions. They are deployed just beneath the snow surface and point downwards to detect the conical radio emission from neutrino interactions. The science team will receive support from a mountaineer in scouting the path to the station locations, from a BFC person experienced in camp setup and take-down, and general assistant(s) (GA) for removing snow from the work site.

Deploying Team Members:

- Zongnan Fan
- Stuart Kleinfelder (Co-PI)
- Corey Reed
- Joulien Tatar

Return to Index

Project Details 2012-2013

Ice Coring And Drilling Services (ICDS) Support For WAIS Divide

The DISC Drill's new borehole imaging system is deployed at WAIS Divide. Photo Credit: Jay Johnson.

Program Manager:
Dr. Julie Palais

Event Number: T-350-M
NSF/OPP Contract

ASC POC/Implementer:
Deborah Roth / Jessica Jenkins

Dr. Charles Bentley (Principal Investigator)
bentley@geology.wisc.edu
http://waisdivide.unh.edu

University of Wisconsin Madison
Ice Core Drilling Services
Madison, Wisconsin

Supporting Stations: McMurdo Station
Research Locations: WAIS Divide Camp

Project Description:

WAIS Divide is a collaboration of about 40 separate but synergistic projects funded by NSF to collect deep ice cores from the West Antarctic Ice Sheet (WAIS). Work began with construction of a field camp in 2005-06 and the first cores were recovered in 2006-07. On December 31, 2011 drillers reached the final depth goal of 3,405 meters, and recovered the longest U.S. ice core to date from the polar regions. Other deploying projects this year are the Science Coordination Office (SCO, Kendrick Taylor) I-477 and and Jeff Severinghaus I-476-M. IDDO (Ice Drill Design and Operations) was established by NSF in 2008 to coordinate long- and short-term planning in collaboration with the US ice science community. IDDO is the principle supplier of ice drilling and coring equipment, support and expertise for NSF-funded research.

Field Season Overview:

This will be the sixth operational season for IDDO's DISC (Deep Ice Sheet

Project Indexes
Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites
Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season
Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Coring) drill system at WAIS Divide. Fourteen drillers will work with Jeff Severinghaus I-476 to use the DISC Drill's replicate coring technology to collect approximately 250 meters of replicate ice core.

Deploying Team Members:

- Charles Bentley (PI)
- Patrick Cassidy
- Jamie Coyne
- Kristina Dahnert (Team Leader)
- David Ferris
- Christopher Gibson
- Michael Jayred
- Jay Johnson (Team Leader)
- Don Lebar
- Linda Morris
- Nicolai Mortensen
- Elizabeth Morton

Return to Index

Project Details 2012-2013

Cosmic Ray Observations At McMurdo Station

Program Manager:
Dr. Vladimir Papitashvili

Event Number: A-120-M

ASC POC/Implementer:
Leslie Blank / Cara Sucher

Dr. John Bieber (Principal Investigator)
jwbieber@bartol.udel.edu
http://neutronm.bartol.udel.edu

University of Delaware
Bartol Research Institute
Newark, Delaware

Supporting Stations: McMurdo Station
Research Locations: CosRay Building

Project Description:

Installed during the 1959-60 field season, the Cosray lab is the longest continuous-running experiment in the US Antarctic Program. This 52-year data set plays a crucial role in understanding the nature and cause of cosmic ray and solar terrestrial variations occurring over the 11-year sunspot cycle, 22-year Hale cycle, and longer time scales. Neutron-monitoring provides a three-dimensional perspective of the anisotropic flux of cosmic rays that continuously bombard Earth. The data acquired by this research project will advance the understanding of fundamental plasma processes that occur on the Sun and in interplanetary space. Researchers will analyze data acquired on station in concert with data from the "Spaceship Earth" neutron monitor network to understand variations associated with solar energetic particles that occur on time scales of minutes to hours. In a new application made possible by real-time data availability, the observations will also assist space weather forecasting and specification.

Field Season Overview:

This year is a milestone for the project, as team members begin a move to the South Korean Station Jang Bogo. Two sections (12 detectors) will be disassembled and packed in shipping containers for transport to New Zealand. The remaining section will continue to operate at McMurdo for two more years while the first sections are installed at Jang Bogo and a normalization run is conducted. The final section will be packed for shipment

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

in 2014-15, at which time the CosRay building is scheduled for decommission. The McMurdo Research Associate (RA) will continue to support the remaining section until it is moved.

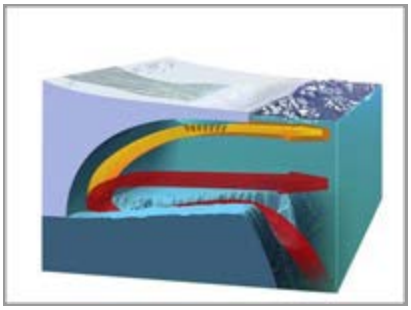
Deploying Team Members:

- Paul Evenson (Team Leader)

Return to Index

Project Details 2012-2013

IPY: Collaborative Research: Ocean-Ice Sheet Interaction In The Amundsen Sea: The Keystone Of West Antarctic Stability



Geophysical information collected by old and new technology (GPS, seismometers, cameras and ocean sensors deployed in hot water drill holes) reveals what may be happening under Pine Island Glacier. Graphic copyright Frank Ippolito.

Program Manager:
Dr. Sonia Esperanca

Event Number: C-407-M

ASC POC/Implementer:
Leslie Blank / Kevin Gibbons

Dr. Robert Bindschadler (Principal Investigator)
Robert.A.Bindschadler@nasa.gov
http://pigiceshelf.nasa.gov

National Aeronautics and Space Administration
Goddard Space Flight Center
Greenbelt, Maryland

Supporting Stations: McMurdo Station
Research Locations: Pine Island Glacier

Project Description:

Rapid changes to the West Antarctic ice sheet (WAIS) where it flows into the Amundsen Sea may be caused by weakening of the floating ice shelf that helps hold the ice sheet in place. Researchers hypothesize that warm water is melting the undersides of these ice shelves decreasing the back pressure, allowing the ice sheet to flow faster and leading to a smaller ice sheet which eventually leads to higher sea levels and slow motion coastal flooding worldwide. Satellite observations can identify ice sheet changes but they cannot reveal conditions under the ice. This fieldwork will make direct observations of the ice beneath the Pine Island Glacier (PIG) including geophysical features of the sub-shelf cavity and cavity bed, water properties within the ice cavity, flow geometry, and visual appearance (using photography). These direct measurements will be fed into advanced computer models of ocean and ice characteristics to shed light on these

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

changes.

Field Season Overview:

The goal for this field season is to establish a science camp on the ice shelf at three successive locations at which ocean instrumentation will be deployed beneath the ice shelf through holes melted using a hot water drill. Cameras, lowered into these hole prior to ocean instrument deployment, will explore the cavity and underside of the ice shelf. Geophysical measurements will be conducted along surface traverses and at up to 30 more remote locations on the ice shelf. Data from ten instruments (five GPS, five seismometers) deployed on the ice shelf last season will be collected and the instruments possibly relocated. Put-in, take-out and resupply will be supported by a combination of LC-130, Twin Otter and surface traverse. Local support includes helicopters and will be based at the PIG main camp which was established last season.

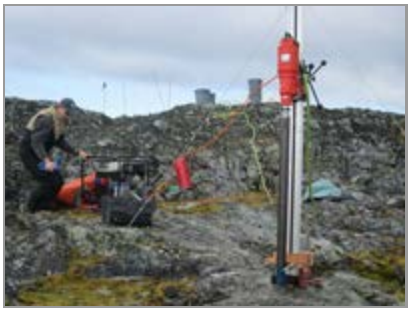
Deploying Team Members:

- Sridhar Anandakrishnan (Co-PI)
- Alberto Behar (Co-PI)
- Robert Bindschadler (PI)
- Carl Gladish
- David Holland (Co-PI)
- Leo Peters
- Dale Pomraning
- William Shaw
- William Shaw
- Michael Shortt
- Christina Stam
- Timothy Stanton (Co-PI)
- Einar Steinarsson
- James Stockel
- James Stockel
- Martin Truffer (Co-PI)

Return to Index

Project Details 2012-2013

Impact Of Recent Climate Warming On Active-Layer Dynamics, Permafrost, And Soil Properties On The Western Antarctic Peninsula



Drilling in bedrock at Amsler Island near Palmer Station to install sensors that monitor changes in permafrost temperature. Photo courtesy of Jim Bockheim.

Program Manager:
Dr. Alexandra Isern

Event Number: G-239-P

ASC POC/Implementer:
Samina Ouda / Cara Ferrier

Dr. James Bockheim (Principal Investigator)
bockheim@wisc.edu
https://mywebspace.wisc.edu/krwilhelm/web/Antarctica%20Website/peninsula.html

University of Wisconsin Madison
Department of Soil Science
Madison , Wisconsin

Supporting Stations: Palmer Station
Research Locations: Palmer Station, Primavera Station (Argentina)

Project Description:

This is a three-year collaborative project with CALM (Circumpolar Active Layer Monitoring, funded in part by a grant from the NSF's Arctic Research and Logistics program) and PERMANTAR (Permafrost and Active Layer Monitoring in the Maritime Antarctic, funded by Portuguese and Spanish programs). Researchers will establish permafrost and soil monitoring stations on Livingston and Deception Islands, at Palmer Station, and on an island site (to be selected) between Palmer Station and Livingston Island. Soil and permafrost are sensitive indicators of climate change and these new sites are particularly significant because recent climate change is exceptionally evident here. Each soil-climate/active-layer monitoring station comprises an array of shallow boreholes with sensors that record soil temperatures year-round. Permafrost is monitored through a 10-15-meter-deep borehole.

Field Season Overview:

This is the final field season for this award. Participants will deploy onboard the ARSV Laurence M. Gould (LMG) to visit the soil and permafrost monitoring stations installed during the previous two field seasons. They will download data from 21 shallow

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

boreholes and two deeper permafrost boreholes at Palmer (US) and Primavera (Argentina) Stations. Unless the project receives further NSF support, the PI will turn over the Palmer Station installations to the Palmer LTER, and the island installations to the Portuguese.

Deploying Team Members:

- Nicholas Haus
- Kelly Wilhelm

Return to Index

Project Details 2012-2013

McMurdo And South Pole SuperDARN: Investigation Of The Ionospheric Dynamics And Magnetosphere-Ionosphere Coupling In Antarctica

Program Manager:
Dr. Alexandra Isern

Event Number: A-369-M/S
NSF/PLR Award 0944270

ASC POC/Implementer:
Elizabeth Watson / Brian Johnson

Dr. William Bristow (Principal Investigator)
bill.bristow@gi.alaska.edu
http://SuperDARN.jhuapl.edu

University of Alaska Fairbanks
Geophysical Institute
Fairbanks, Alaska

Supporting Stations: McMurdo Station, South Pole Station
Research Locations: Near Stations

Project Description:

The Super Dual Auroral Radar Network (SuperDARN) is a global international radar network of 22 installations observing high frequency (HF) bands between 8 and 22 MHz. Radar systems have been installed at McMurdo Station (2009-10) and South Pole Station (2011-12), extending the global-scale coverage in the southern hemisphere and helping answer questions about geomagnetic conjugacy of global magnetic storms and substorms and differences in the ionospheric plasma convection caused by the asymmetry of solar illumination in both hemispheres. The SuperDARN network, with its ability to observe global-scale convection with excellent temporal and spatial resolution, has proven to be the most powerful tool available for the ground-based research, allowing scientists to address the most fundamental and important questions of space physics. These data are also relevant to important societal issues such as space weather studies, and they enhance the usefulness of data from other instruments.

Field Season Overview:

Each austral summer researchers deploy to McMurdo and the South Pole to perform system maintenance such as inspecting the equipment, tightening guy wires and antennas, replacing shackles, re-leveling the radar poles, and updating/repairing the on-site computer system. Throughout the year

Project Indexes
Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites
Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season
Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

contract staff maintain system components and vehicular access to the array.

Deploying Team Members:

- William Bristow (PI)
- Jeff Spaleta

Return to Index

Project Details 2012-2013

Cosmological Research With The 10-Meter South Pole Telescope

Program Manager:
Dr. Vladimir Papitashvili

Event Number: A-379-S
NSF/PLR Award 1248097

ASC POC/Implementer:
Elizabeth Watson / Paul Sullivan

Dr. John Carlstrom (Principal Investigator)
jc@kicp.uchicago.edu
http://pole.uchicago.edu

University of Chicago
Astronomy and Astrophysics
Chicago, Illinois

Supporting Stations: South Pole Station
Research Locations: Dark Sector

Project Description:

The South Pole Telescope (SPT) project conducts cosmological research by measuring the intensity and polarization anisotropy of the Cosmic Microwave Background (CMB). By surveying 4,000 square degrees of the sky with high sensitivity in three wavelength bands, the telescope can detect galaxy clusters through the spectral distortion they impart on the CMB. Researchers will use the resulting catalog of galaxy clusters to set constraints on the mysterious dark energy that dominates the mass-energy density of the universe and is causing the expansion of the universe to accelerate.

Field Season Overview:

This year contract staff and project team members will complete installation of the shields, specifically the "wings" extending from the guard ring along the sides of the steel structure that supports the receiver cabin and secondary support. Unfinished tasking from last austral summer will be completed, calibrations and routine maintenance tasks will be performed. The SPT conducts observations all winter.

Deploying Team Members:

- Ken Aird
- Bradford Benson

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

- John Carlstrom (PI)
- Clarence Chang
- Hsiao-Mei Cho
- Abigail Crites
- Tijmen de Haan
- Elizabeth George
- Nils Halverson (Co-PI)
- Nicholas Harrington
- Jason Henning
- Stephen Hoover
- James Hrubes
- Johannes Hubmayr
- Ryan Keisler
- Christopher Kendall
- Erik Leitch
- Tyler Natoli
- Erik Nichols
- Valentyn Novosad
- James Sayre
- Graeme Smecher
- Kyle Story

Return to Index

Project Details 2012-2013

IRIS/PASSCAL Seismic Support

Program Manager:
Dr. Alexandra Isern

Event Number: T-299-M
NSF/EAR Award 1261681

ASC POC/Implementer:
Leslie Blank / Cara Sucher

Mr. Paul Carpenter (Principal Investigator)
pcarpenter@passcal.nmt.edu
http://www.passcal.nmt.edu/content/polar

New Mexico Institute of Mining and Technology
IRIS/PASSCAL Instrument Center
Socorro, New Mexico

Supporting Stations: McMurdo Station
Research Locations: As required to support NSF-funded projects

Project Description:

The IRIS Program for Array Seismic Studies of the Continental Lithosphere (PASSCAL) Instrument Center and EarthScope USArray Array Operations Facility (AOF) at New Mexico Institute of Mining and Technology support cutting-edge seismological research into Earth's fundamental geological structure and processes. The facility provides instrumentation to NSF-funded seismological projects in Antarctica and elsewhere. Antarctic and arctic projects comprise five to ten percent of all the projects PASSCAL supports worldwide.

Field Season Overview:

Each year, PASSCAL supports a variety of NSF-funded science projects while also developing cold station deployment strategies, collaborating with vendors to develop and test equipment rated for -55°C / -67°F, building an equipment pool, and creating a repository for cold station techniques.

This year, PASSCAL will support the following projects: Susan Schwartz C-525-M, Terry Wilson/POLENET G-079, Doug Wiens G-089-M/S, Phil Kyle/MEVO III G-081-M, Howard Conway I-210-M, and other project which may have late requests.

Deploying Team Members:

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Paul Carpenter (PI)

- Greg Chavez
- Dean Childs
- Jason Hebert
- Guy Tytgat

Return to Index

Project Details 2012-2013

Physiological And Ecosystem Structure Forcings On Carbon Fluxes In The Southern Ocean Mixed Layer

Program Manager:
Dr. Peter Milne

Event Number: O-405-L
NSF/PLR Award 1043339

ASC POC/Implementer:
Samina Ouda / Robert Kluckhohn

Dr. Nicolas Cassar (Principal Investigator)
nicolas.cassar@duke.edu
http://www.nicholas.duke.edu/people/faculty/cassar/projects.htm

Duke University
Nicholas School of Environment
Durham, North Carolina

Supporting Stations: ARSV Laurence M. Gould
Research Locations: LTER study site

Project Description:

This project will advance our understanding of Southern Ocean biogeochemistry by investigating some of the physiological and ecosystem mechanisms governing the interannual variability in mixed layer carbon fluxes in the Southern Ocean. More specifically, researchers will address the following postulates: (1) the well documented influence of iron on primary production reverberates onto carbon export production in the Southern Ocean; (2) carbon export production and efficiency are not dependent on the presence of diatoms in the Southern Ocean; (3) grazers enhance carbon export production and efficiency in some regions of the Southern Ocean.

Field Season Overview:

During each of three LTER cruises, LMG13-01, 14-01, and 15-01, one project participant will install the system and sail the cruise to monitor the equipment. The system comprises an equilibrator inlet mass spectrometer, underway transmissometer, flow cytometer, and FRRF (Fast Repetition Rate Fluorometer). At the end of the cruise the project participant will remove the sampling package from the vessel.

Return to Index

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

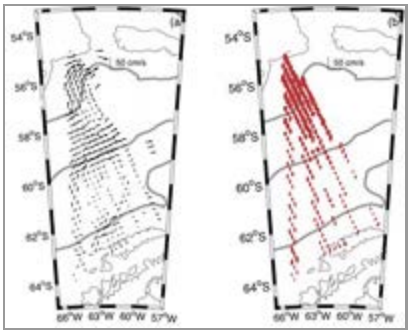
2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Project Details 2012-2013

Collaborative Research: Southern Ocean Current Observations From The U.S. Antarctic Research Vessels



Time- and depth-averaged ocean currents (a) and standard deviation ellipses (b) calculated from 262 Drake Passage ADCP transects between 1999 and 2011. Climatological locations of the main Antarctic Circumpolar Current fronts are shown as thick gray lines: from north to south. Graphic courtesy of Teri Chereskin.

Program Manager:
Dr. Peter Milne

Event Number: O-317-L/N
NSF/PLR Award 0838750

ASC POC/Implementer:
Addie Coyac / Robert Kluckhohn

Dr. Teresa Chereskin (Principal Investigator)
tchereskin@ucsd.edu
http://currents.soest.hawaii.edu/antarctic/

University of California San Diego
Scripps Institution of Oceanography
La Jolla, California

Supporting Stations: ARSV Laurence M. Gould, RV/IB Nathaniel B. Palmer

Research Locations: All vessel cruise tracks

Project Description:

This project builds upon a successful 13-year collaboration that developed the capability to routinely acquire, process and archive ocean current measurements from hull mounted shipboard acoustic Doppler current profilers (ADCPs) onboard the NBP and LMG research vessels. The long-term science objectives are to measure the seasonal and interannual variability of upper ocean currents within the Drake Passage, to combine this information with similar temperature observations to study the variability in the heat exchange, and to characterize the velocity and acoustic backscatter structure in the Southern Ocean on a variety of time and space scales. The

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

onboard equipment includes 150kHz NB ADCPs (running since the start of the project) and newer 38kHz phased array ADCPs (installed on the LMG in 2004 and on the NBP in 2009). The collected, QC'ed data is used by a wide variety of Antarctic science programs and is easily accessible for retrospective analyses, planning future observations and validating numerical models.

Field Season Overview:

Each year, two project participants attend a port call timed so that they can perform work onboard both vessels. The work includes routine maintenance, updates, and upgrades as needed for the data acquisition computers. Occasionally a participant may sail a cruise for more comprehensive work on the systems. During cruises, the equipment collects underway data and contract staff technicians start/stop data acquisition, monitor and troubleshoot as needed, and archive the data. At the end of each cruise, the ADCP data is included on the distribution to onboard PIs and hard drives are sent to the project PIs.

Deploying Team Members:

- Julia Hummon

Return to Index

Project Details 2012-2013

Lidar Investigation Of Middle And Upper Atmosphere Temperature, Composition, Chemistry, And Dynamics At McMurdo, Antarctica

Program Manager:
Dr. Vladimir Papitashvili

Event Number: A-130-M

ASC POC/Implementer:
John Rand / Cara Sucher

Dr. Xinzhao Chu (Principal Investigator)
xinzhao.chu@colorado.edu
http://cires.colorado.edu/science/groups/chu/projects/mcmurdo.html

University of Colorado Boulder
CIRES
Boulder, Colorado

Supporting Stations: McMurdo Station
Research Locations: Crary Lab

Project Description:

This project continues the operation of the Fe Boltzmann lidar installed in the Antarctica New Zealand (ANZ) lab at Arrival Heights near McMurdo Station. The initial instrument installation took place during the 2010-11 summer season. Science objectives include: (1) Exploring the recently discovered thermosphere Fe layers to at least 155 kilometers, deriving neutral temperatures from these layers, and developing a model to quantitatively explain the observations; (2) Developing the climatology of gravity wave potential energy from the lower atmosphere to the middle atmosphere and lower thermosphere, investigating wave dissipation, and characterizing high frequency and inertial gravity waves by combining lidar, radar and imager data with modeling; (3) Studying the mechanisms behind the inter-hemispheric difference and latitudinal dependence of PMC characteristics, exploring the summer-time extreme Fe events and their possible link to polar mesospheric clouds (PMCs), aurora particle precipitation and meteor smoke particles; (4) Developing the climatology of temperature from the surface to 110 kilometers, characterizing its diurnal, seasonal and inter-annual variations, and exploring various mechanisms that affect the thermal balance of the polar atmosphere on both long and short time scales; and (5) Developing the climatology of the mesospheric Fe layers, including their chemical vertical flux, characterize the diurnal, seasonal, inter-annual and

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

solar cycle variations of the Fe layers, and developing a comprehensive model that accurately reproduces the observations.

Field Season Overview:

This year, one lidar scientist will deploy at Winfly (August 2012) to assist the winter-over lidar engineer in maintaining the equipment and collecting as much data as possible. The winter-over scientist will redeploy in November and additional field team members will deploy for much of the austral summer. One grantee will remain as the 2012-13 winter-over.

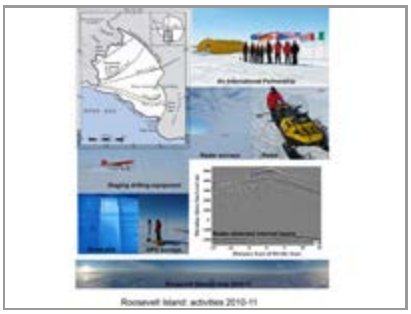
Deploying Team Members:

- Cao Chen
- Xinzhao Chu (PI)
- Weichun Fong

Return to Index

Project Details 2012-2013

Deglaciation Of The Ross Sea Embayment - Constraints From Roosevelt Island



Program Manager:
Dr. Julie Palais

Event Number: I-209-M
NSF/PLR Award 0944307

ASC POC/Implementer:
John Rand / Elizabeth Kauffman

Dr. Howard Conway (Principal Investigator)
conway@ess.washington.edu
http://www.ess.washington.edu/Surface/Glaciology/projects/ross_sea_history/

University of Washington
Earth and Space Sciences
Seattle, Washington

Supporting Stations: McMurdo Station
Research Locations: Roosevelt Island

Project Description:

This international ice core drilling project on Roosevelt Island is a partnership with New Zealand, UK, Denmark, Germany and China. Researchers seek to understand past, present and future environmental changes in the Ross Sea sector of West Antarctica. The scientific objectives are to determine histories of climate and ice thickness for Roosevelt Island, and to develop an updated model of the configuration and thickness of the ice in the Ross Sea Embayment during the last glacial maximum. The project's New Zealand partners have started drilling a 750-meter ice core using their new intermediate-depth drill. They expect to complete the drilling in early January 2013. After drilling is complete, researchers will conduct borehole logging measurements and geophysical measurements to characterize spatial variations in ice thickness and surface velocities across the island.

Field Season Overview:

Good progress was made last season and they plan to complete drilling to the bed by the end of this coming season. This season, five USAP participants will deploy to (1) complete a final resurvey of the network of poles installed across the island in order to calculate surface motion; (2) complete deep radar surveys along the pole lines to measure ice thickness and internal stratigraphy; (3) remeasure internal layers using BAS phase-sensitive radar to calculate vertical velocities. These measurements will give a direct estimate of thinning; (4) drill a 20-meter

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

hole in the firn to measure the temperature profile; (5) after drilling of the main core is finished, collaborators from Dartmouth will log the borehole (profiles of temperature, sonic velocity and optical stratigraphy).

Deploying Team Members:

- Howard Conway (PI)
- Alexandra Giese
- Robert Hawley (Co-PI)
- Richard Hindmarsh

Return to Index

Project Details 2012-2013

Submarine Groundwater And Freshwater Inputs Along The Western Antarctic Peninsula

Program Manager:
Dr. Peter Milne

Event Number: O-176-L/P
NSF/PLR Award 1142090

ASC POC/Implementer:
Samina Ouda / Philip Spindler

Dr. David Corbett (Principal Investigator)
corbettd@ecu.edu
http://ecusstorm.blogspot.com/

East Carolina University
Department of Geological Sciences
Greenville, North Carolina

Supporting Stations: ARSV Laurence M. Gould, Palmer Station
Research Locations: Local boating area / Western Antarctic Peninsula

Project Description:

This project seeks to determine: (1) submarine groundwater discharge (SGD) fluxes to nearshore environments of the Western Antarctic Peninsula (WAP); (2) the relative contribution of iron and nutrients from this source to the receiving waters compared to fresh meltwater; and (3) the rate of across-shelf mixing that potentially introduce iron and other constituents to offshore waters. The WAP coastal environment provides a unique opportunity to investigate a previously unmeasured source of iron and nutrients to coastal waters and further our understanding of glacial melting and the land-sea interactions that can be applicable to other polar and alpine regions. Researchers will conduct direct and indirect measurements to quantify SGD, discern freshwater flow, quantify iron and nutrient fluxes, and measure offshore transport and mixing.

Field Season Overview:

Fieldwork for this study will be conducted near Palmer Station on the Western Antarctic Peninsula from January to March. Based on an initial survey of 20-30 sites, subsets of 15-20 sampling locations will be set up as shore-normal transects and sampled weekly throughout the field campaign. Researchers will also collect interstitial water along the shorezone adjacent to the water sampling area. Porewater samples will be collected at 10, 30, 100 centimeter depths, and to maximum penetration near the waterline

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

where sediments allow penetration of the sampling mechanism. In addition, the field team will deploy a “seepage meter” nearshore to measure groundwater discharge directly. Most of the samples will be analyzed on station and some will be returned to the home institution.

Deploying Team Members:

- David Corbett (PI)
- Jared Crenshaw
- Kimberly Null (Co-PI)
- Richard Peterson
- Richard Viso
- John Walsh

Return to Index

Project Details 2012-2013

Exploring The Significance Of NA-Alkaline Magmatism In Subduction Systems, A Case Study From The Ross Orogen

Program Manager:
Dr. Alexandra Isern

Event Number: G-064-M

ASC POC/Implementer:
Leslie Blank / Jessica Jenkins

Dr. John Cottle (Principal Investigator)
cottle@geol.ucsb.edu
http://www.antarctica360.net

University of California Santa Barbara
Department of Geological Sciences
Santa Barbara, California

Supporting Stations: McMurdo Station
Research Locations: Conway Range / Cape Selborne / Darwin Mountains

Project Description:

This project will map and study basement rocks exposed in the Royal Society Range (2011/2012 season) and the Darwin Glacier regions (2012/2013 season) of the TransAntarctic Mountains. The Royal Society Range lies approximately 90 kilometers east-southeast of McMurdo Station in the TransAntarctic Mountains while the Darwin Glacier area is 200 kilometers southwest of McMurdo Station, immediately north of the Byrd Glacier. Researchers hypothesize that these two areas represent the northern and southern boundaries of a geologically distinct segment within the southern Victoria Land sector of the 550-500 Ma Ross Orogen. This hypothesis will be tested in the field by conducting detailed geologic mapping and sample collecting. In subsequent laboratory work researchers will determine the ages and chemistry of the basement rocks. These two datasets combined will thus build up a more complete picture of the geologic evolution of this part of the Transantacrtic Mountains.

Field Season Overview:

Participants will deploy for eleven weeks in 2012-13 to conduct detailed geologic mapping and collect samples of exposed basement rock in two areas in the Transantarctic Mountains. This year the team will operate out of

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

three small tent camps established by helicopter, approximately 300 kilometers southeast of McMurdo Station. Snow machines will provide overland travel in the study areas and helicopter support (day trips with close support) will provide access to outlying outcrops from the camp sites.

Deploying Team Members:

- John Cottle (PI)
- Graham Hagen-Peter (Team Leader)
- Forrest Horton

Return to Index

Project Details 2012-2013

Balloon-Borne Large Aperture Sub-Millimeter Telescope (BLAST-POL)

The BLAST crew and payload just before launch in 2010. Photo courtesy of Mark Devlin.

Program Manager:
Dr. Vladimir Papitashvili

Event Number: A-147-M

ASC POC/Implementer:
Addie Coyac / Brian Johnson

Dr. Mark Devlin (Principal Investigator)
devlin@physics.upenn.edu
http://blastexperiment.info/

University of Pennsylvania
Department of Physics and Astronomy
Philadelphia, Pennsylvania

Supporting Stations: McMurdo Station
Research Locations: LDB Facility at Williams Field

Project Description:

BLAST (Balloon-borne Large-Aperture Submillimeter Telescope) is a comprehensive program to study the link between Galactic magnetic fields and star formation. BLASTPol is the first instrument to combine the sensitivity and mapping speed necessary to trace magnetic fields across entire clouds with the resolution to trace fields down into dense substructures, including cores and laments. BLASTPol therefore provides the critical link between the PLANCK all-sky polarization maps with 5' resolution and ALMA's ultra-high resolution, but with only a 20" field of view. BLASTPol will use the PLANCK data to refine its target selection, then ALMA will utilize BLASTPol maps to "zero in" on areas of particular interest. Together, these three instruments will probe the inner workings of star formation with previously unreachable resolution, sensitivity and scope.

Field Season Overview:

This year will be the third float in Antarctica for this instrument; 2006 and 2010 were the prior field seasons. The instrument will be launched on a stratospheric balloon from Williams Field as a part of the CSBF ballooning operations (Stepp A-145). The field party of twelve will begin arriving at McMurdo in late October with the expectation that the instrument will be launched in December.

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Deploying Team Members:

- Francesco Angile
- Steven Benton
- Mark Devlin (PI)
- Bradley Dober
- Laura Fissel
- Nicholas Galitzki
- Natalie Gandilo
- Jeffery Klein
- Tristan Matthews
- Barth Netterfield (Co-PI)
- Giles Novak (Co-PI)
- Enzo Pascale (Co-PI)
- Juan Soler Pulido
- Gregory Tucker

Return to Index

Project Details 2012-2013

NOAA's Global Drifter Program (GDP)

Program Manager:
Dr. Peter Milne

Event Number: X-592-E
NSF/NOAA Agreement

ASC POC/Implementer:
Addie Coyac

Dr. Shaun R Dolk (Principal Investigator)
shaun.dolk@noaa.gov
http://www.aoml.noaa.gov/phod/dac/gdp_information.php

National Oceanic and Atmospheric Administration
Miami, Florida

Supporting Stations: Special Project
Research Locations: Southern Ocean

Project Description:

The Global Drifter Program (GDP) is the principle component of the Global Surface Drifting Buoy Array, a branch of NOAA's Global Ocean Observing System (GOOS) and a scientific project of the Data Buoy Cooperation Panel (DBCP). Its objectives are to (1) Maintain a global 5x5 degree array of 1,250 ARGOS-tracked surface drifting buoys to meet the need for an accurate and globally dense set of in-situ observations of mixed layer currents, sea surface temperature, atmospheric pressure, winds and salinity, and (2) Provide a data processing system for scientific use of these data. These data support short-term (seasonal to interannual) climate predictions as well as climate research and monitoring.

Field Season Overview:

The project PI ships all buoys directly to Punta Arenas for vessel onload. Two drifters will be deployed by staff technicians during each crossing of the Drake Passage. For optimal spacing, deployments will be staggered between the southbound and northbound voyages. For example, on the southbound leg a drifter will be deployed at 59-degrees south latitude; on the northbound leg a drifter will be deployed at 60-degrees south latitude. After each deployment staff technicians will send an email to the PI indicating the buoy identification number, date and location (latitude/longitude) where it was dropped.

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Return to Index

Project Details 2012-2013

Continuation Of The LARISSA Continuous GPS Network In View Of Observed Dynamic Response To Antarctic Peninsula Mass Balance And Required Geologic Constraints

Program Manager:
Dr. Lisa Clough

Event Number: C-515-E/L
NSF/PLR Award 1143981

ASC POC/Implementer:
Addie Coyac / Robert Kluckhohn

Dr. Eugene Domack (Principal Investigator)
edomack@hamilton.edu
http://www.hamilton.edu/larissa/

Hamilton College
Geology
Clinton, New York

Supporting Stations: Special Project, ARSV Laurence M. Gould
Research Locations: Antarctic Peninsula

Project Description:

This project's research objectives are as follows: (1) Upgrade existing continuous GPS (cGPS) facility at Hugo Island (Santa Claus Rock) to fully evaluate the bedrock uplift rate at this far field site and to make sure the data transmission is continuous through the low-light winter season of this strongly maritime station site; (2) Expand the spatial coverage of cGPS stations (vertical uplift constraints) along the northern Antarctic Peninsula and add to them to the existing LARISSA (POLENET) network; (3) Evaluate the deglacial history (radiocarbon chronology) from marine sediment records obtained from the western drainage of the Bruce Plateau Ice Dome, by collecting cores along the Graham Land Coast and Gerlache Strait; and (4) Expand the paleoenvironmental utility of marine proxies for paleotemperature as derived from biomarker compounds and constrained calibration of the proxies from modern settings.

Field Season Overview:

Six participants will deploy onboard LMG12-11 for five science days of ship time aboard the ARSV Laurence M. Gould. Their tasking includes installing new cGPS stations and upgrading existing ones, obtain sediment cores (Kasten and jumbo pisten) along the southern Gerlache Grounding Line, and

Project Indexes
Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites
Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season
Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

deploy the yoyo digital bottom camera in Brialmont Cove (near Spring Point). Throughout much of the work they will also collect water samples using pumps or CTDs.

Deploying Team Members:

- Eugene Domack (PI)
- Deanna Nappi
- Brad Rosenheim
- Amelia Shevenell
- Catherine Smith

Return to Index

Project Details 2012-2013

McMurdo LTER - Lakes: Increased Connectivity In A Polar Desert Resulting From Climate Warming: McMurdo Dry Valley LTER Program

Program Manager:
Dr. Lisa Clough

Event Number: B-511-M
NSF/PLR Award 1115245

ASC POC/Implementer:
Elizabeth Watson / Cara Sucher

Dr. Peter Doran (Principal Investigator)
pdoran@uic.edu
http://www.mcmlter.org

University of Illinois Chicago
Dept of Earth and Environmental Sciences
Chicago, Illinois

Supporting Stations: McMurdo Station
Research Locations: Dry Valleys

Project Description:

In 1980, the NSF funded the US Long Term Ecological Research (LTER) Network, a collaborative effort involving more than 1,800 scientists and students. The McMurdo LTER is one of 26 sites that investigates ecological processes over long temporal and broad spatial scales. The McMurdo LTER program is an inter-disciplinary and multi-disciplinary study of the aquatic and terrestrial ecosystems in the ice-free McMurdo Dry Valleys. This six-year award cycle comprises seven collaborative projects: Andrew Fountain B-504, John Priscu B-505, Diane McKnight B-506, Diana Wall B-507, Jeb Barrett, B-508, Berry Lyons B-509, and Peter Doran B-511. This project is the “Lakes 2” component of the McMurdo LTER. Its primary focus is the physical limnology of the McMurdo Dry Valley lakes. This year’s goals are: (1) to upgrade and maintain long-term automated lake monitoring equipment; (2) carry out manual lake hydrologic balance measurements (lake level and ablation); (3) measure the movement of surface ice using high-precision GPS; (4) characterize signatures and patterns of benthic productivity (using SCUBA); and (5) collect sediment and water samples for a suite of geochemical experiments.

Field Season Overview:

Three participants will be based at the established field camps—Fryxell,

Project Indexes
Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites
Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season
Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Bonney, Hoare—and make day trips by helicopter to Wright and Victoria Valleys. With UNAVCO's assistance, they will also survey established ablation stakes in the Taylor Valley. Team members will SCUBA diving at Lake Fryxell in order to continue benthic studies in collaboration with the New Zealand Antarctic program.

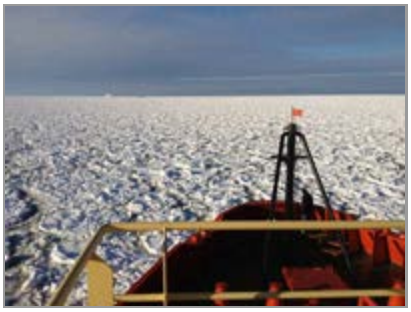
Deploying Team Members:

- Kyle Cronin
- Peter Doran (PI)
- Peter Doran (PI)
- Hilary Dugan (Team Leader)

Return to Index

Project Details 2012-2013

Palmer Long Term Ecological Research (LTER): Looking Back In Time Through Marine Ecosystem Space, Microbial Ecology Component



Midsummer sea ice near Charcot Island, 24 January 2012 seen from Research Vessel LM GOULD. Credit: H Ducklow.

Program Manager:
Dr. Charles Amsler

Event Number: B-045-L/P
NSF/PLR Award 0823101

ASC POC/Implementer:
Samina Ouda / Philip Spindler

Dr. Hugh William Ducklow (Principal Investigator)
hducklow@ldeo.columbia.edu
http://pal.lternet.edu/

Columbia University
Lamont Doherty Earth Observatory
Palisades, New York

Supporting Stations: ARSV Laurence M. Gould, Palmer Station
Research Locations: West Antarctic Peninsula

Project Description:

Microorganisms form an important ecosystem component at the base of Antarctic foodwebs and catalyze critical biogeochemical transformations in the carbon, nitrogen and other elemental cycles. This project documents long-term trends variability of bulk bacterial and Archaeal biomass and production rates in space and time. Researchers seek to understand the effects of climate change and ecosystem response on dissolved oxygen, organic and inorganic carbon—key biogeochemical properties. The Southern Ocean is an important sink for atmospheric carbon dioxide and studies of the metabolically active gases can clarify the linkages among biological and physical processes affecting oxygen storage. Microbial oxidation of dissolved organic compounds is an important flow in marine ecosystems and provides a link between microbial functioning and oxygen/carbon dioxide cycles.

Field Season Overview:

The field sampling season takes place from mid- to late-October through the end of March and thus encompasses the entire biologically active plankton ecology season. This component of the LTER program will include two

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

participants on station from October through March. Researchers will collect samples in Arthur Harbor at the LTER A-G hydrographic stations.

Project participants will also sail onboard the annual 28-day LTER cruise onboard the Laurence M. Gould (LMG) from January 1 to February 15th. Vessel-based activities include collecting samples by trawling, conducting multiple CTD casts, deploying gliders and servicing five physical oceanographic moorings. A sediment trap mooring will be recovered and re-deployed at the LTER site near Hugo Island. Three- to five-day field camps will take place on Avian and Charcot Islands. Zodiac support is required for deploying to these field sites, as time and ice conditions permit. During the time at process stations, Zodiac support will be allocated for glider operations and to deploy satellite tags on baleen whales, collect biopsy samples, and individual photo-ID data. Two fully-equipped radioisotope vans will be used for C14 and for 3H.

Deploying Team Members:

- Emelia DeForce
- Hugh Ducklow (PI)
- David Johnston
- Sarah Laperriere
- Catherine Luria
- Nikhil Murgai
- Stefanie Strebel
- Michael Stukel
- Natasja van Gestel
- Lara Vimercati
- Kathleen Woods

Return to Index

Project Details 2012-2013

Studies Of Solar Wind - Magnetosphere Interactions Using Observations Of ULF Waves At An Extensive Ground Array At High Latitudes

The vault at Arrival Heights containing the project's three-axis search coil sensors. Photo courtesy of Marc Lessard.

Program Manager:
Dr. Vladimir Papitashvili

Event Number: A-102-M/S
NSF/PLR Award 1142045

ASC POC/Implementer:
Elizabeth Watson / Cara Sucher

Dr. Mark J Engebretson (Principal Investigator)
engebret@augsburg.edu
http://space.augsburg.edu

Augsburg College
Department of Physics
Minneapolis, Minnesota

Supporting Stations: McMurdo Station, South Pole Station
Research Locations: Arrival Heights / Cusp Lab

Project Description:

This project is a continuation of current studies using search coil magnetometers already installed and operating at South Pole Station's Cusp Lab and Arrival Heights at McMurdo Station, as well as at Halley (a UK base in Antarctica) and two sites in the Arctic. Researchers use time-series data from magnetometers at these and other Antarctic sites (including the PENGUIn Automated Geophysical Observatories), often in conjunction with data from other Arrival Heights instruments, to study the dynamics of the Earth's ionosphere and magnetosphere.

Field Season Overview:

No project participants deploy. Staff Research Associates (RAs) perform routine monitoring of the equipment and computers.

Return to Index

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Project Details 2012-2013

Element Composition Of High-Energy Solar Particles

Program Manager:
Dr. Vladimir Papitashvili

Event Number: A-118-S
NSF/PLR Award 0838839

ASC POC/Implementer:
John Rand / Paul Sullivan

Dr. Paul Evenson (Principal Investigator)
evenson@udel.edu
http://neutronm.bartol.udel.edu

University of Delaware
Physics and Astronomy
Newark, Delaware

Supporting Stations: South Pole Station
Research Locations: B2 Science Lab

Project Description:

This project is part of the University of Delaware's Bartol Research Institute neutron monitor program. One of the program's 11 monitors is installed at the South Pole. This season, researchers will focus on enhancing the ability of IceTop—the surface component of the IceCube neutrino observatory—to determine element composition of solar energetic particles in the energy range of 1-10 Giga-electron-Volts (GeV). Using many components of the former South Pole neutron monitor, researchers will construct an enhanced suite of neutron detectors whose response functions (primarily due to hadrons) have a different dependence on energy and element composition from those of IceTop (primarily due to photons and leptons).

Field Season Overview:

One participant will deploy to test and repair the detectors as needed. Heaters on the outside platform will be replaced with redesigned versions. The grounding scheme for outside detectors will be investigated and revised as appropriate to limit static electricity sensitivity.

Deploying Team Members:

- Paul Evenson (PI)

Project Indexes
Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites
Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season
Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Return to Index

Project Details 2012-2013

McMurdo LTER - Glaciers: Increased Connectivity In A Polar Desert Resulting From Climate Warming: McMurdo Dry Valleys LTER Program

Program Manager:
Dr. Lisa Clough

Event Number: B-504-M
NSF/PLR Award 1115245

ASC POC/Implementer:
Elizabeth Watson / Cara Sucher

Dr. Andrew Fountain (Principal Investigator)
andrew@pdx.edu
http://www.mcmlter.org/

Portland State University
Geology
Portland, Oregon

Supporting Stations: McMurdo Station
Research Locations: Dry Valleys

Project Description:

In 1980, the National Science Foundation (NSF) funded the US Long Term Ecological Research (LTER) Network, a collaborative effort involving more than 1,800 scientists and students. The McMurdo LTER is one of 26 sites that investigates ecological processes over long temporal and broad spatial scales. The McMurdo Station LTER program is an inter-disciplinary and multi-disciplinary study of the aquatic and terrestrial ecosystems in the ice-free McMurdo Dry Valleys. This six-year award cycle comprises seven collaborative projects: Andrew Fountain B-504, John Priscu B-505, Diane McKnight B-506, Diana Wall B-507, Jeb Barrett, B-508, Berry Lyons B-509, and Peter Doran B-511. This project is the “glaciers and meteorology” component of the McMurdo LTER. Researchers will continue measurements of physical properties of Dry Valley glaciers and meteorology, with special emphasis on LTER core research areas.

Field Season Overview:

Three participants will occupy the Lake Hoare camp from November through January. During day trips to the Commonwealth, Howard, Canada, and Taylor glaciers, team members will conduct mass balance measurements and biological studies. Day trips will also be made to meteorological stations in Taylor, Beacon, Wright, Victoria, and Garwood valleys. As in previous

Project Indexes
Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites
Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season
Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

seasons, sensors and dataloggers on the meteorological stations will be replaced and sent to the manufacture for recalibration. The replacement meteorological sensors and dataloggers will remain in the field for two to five years when they will again be exchanged for calibrated instruments.

Deploying Team Members:

- Hassan Basagic
- Andrew Fountain (PI)

Return to Index

Project Details 2012-2013

Palmer Long Term Ecological Research (LTER): Looking Back In Time Through Marine Ecosystem Space, Apex Predator Component

Program Manager:
Dr. Lisa Clough

Event Number: B-013-L/P
NSF/PLR Award 0823101

ASC POC/Implementer:
Samina Ouda / Philip Spindler

Dr. Bill Fraser (Principal Investigator)
bfraser@3rivers.net
http://pal.lternet.edu/

Polar Oceans Research Group
Sheridan, Montana

Supporting Stations: ARSV Laurence M. Gould, Palmer Station
Research Locations: West Antarctic Peninsula

Project Description:

The core, long-term data associated with these Long Term Ecological Research (LTER) studies are derived primarily from local populations distributed over approximately 50 square kilometers near Palmer Station. At-sea surveys of abundance and distribution of seabirds over an area of approximately 80,000 square kilometers provide a larger-scale context for these studies. Spanning three decades, this data collection allows researchers to address a broad suite of ecological issues, including interactions between climate migration and community structure, the effects of landscape geomorphology on biological populations, the mechanics of source-sink population dynamics and the establishing of basic conceptual and empirical links between marine and terrestrial ecology.

Field Season Overview:

Based at Palmer Station from October to April, field team members will use Zodiacs to make day trips and possible overnights within the local boating area. Team members will concentrate on censusing and mapping seabird colonies, obtaining indices of reproductive success, determining diets and foraging ranges, and examining chick growth and energetics. In the lab, researchers will process GIS and telemetry data and analyze diet samples. During LTER's annual cruise aboard the LMG, the "birders" group will establish a field camp of several days duration on Avian Island to census

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

and map Adélie Penguin colonies, obtain diet samples and instrument birds with satellite transmitters and dive-depth recorders. Onboard the vessel they will conduct seabird observations from the bridge. If the conditions and logistics allow, a field party may disembark at stops between Anvers Island and Marguerite Bay to conduct penguin diet sampling.

Deploying Team Members:

- Shawn Farry
- Bill Fraser (PI)
- Jen Mannas
- Donna Patterson-Fraser

Return to Index

Project Details 2012-2013

ELF/VLF Observation Of Whistler-Mode Waves, Lightning Discharge, And Gamma-Ray Events From Palmer Station

Program Manager:
Dr. Vladimir Papitashvili

Event Number: A-336-P

ASC POC/Implementer:
Samina Ouda / Philip Spindler

Dr. John T Gill (Principal Investigator)
gill@ee.stanford.edu
http://vlf.stanford.edu/research/whistler-mode-wave-studies-palmer-station-antarctica

Stanford University
Electrical Engineering
Stanford, California

Supporting Stations: Palmer Station
Research Locations: IMS Building

Project Description:

Whistler-mode waves play a major role in controlling the dynamic evolution of relativistic electron populations in the Earth's radiation belts. They regularly penetrate the ionosphere and can be detected at ground-based stations. Because of its remoteness from anthropogenic electromagnetic noise sources, Palmer Station remains one of the most electromagnetically quiet ELF/VLF receiving sites in the world, allowing researchers to take full advantage of this extremely sensitive receiver system. The system records broadband data (full waveform data sampled at 100 kHz) as well as narrowband data (the demodulated amplitude and phase of narrowband VLF transmitter signals) 24 hours a day, 365 days a year. The scientific investigations involving these data are focused on magnetospherically generated whistler-mode waves; global lightning and thunderstorm activity; the characteristics of lightning discharges associated with terrestrial gamma ray flashes; and the ionospheric effects of gamma ray

Field Season Overview:

The system comprises two magnetic crossed loop antennas (each 81 m^2), a preamplifier, and a PC-based digitization system. The receiver operates in the range from 30 Hz to 50 kHz with 96 dB of dynamic range (16?bit

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

resolution) and is capable of measuring signals on the order of a femtotesla. One participant will deploy to Palmer Station to perform annual maintenance and calibration of the VLF antenna and receiver. One section of the data signal cable will be replaced to prevent moisture and water seepage. The day-to-day maintenance and monitoring of the electronics will be performed by the contract Research Associate (RA).

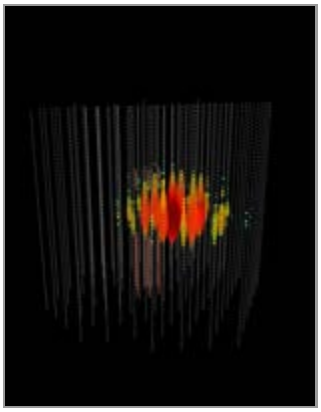
Deploying Team Members:

- Forrest Foust

Return to Index

Project Details 2012-2013

IceCube Operations And Maintenance



Visual display of a neutrino recorded with the IceCube detector. The particle shower shown was produced by a neutrino of just over 1000 TeV energy (for reference, the beam energy of the Large Hadron Collider is 8 TeV). Graphic courtesy of Francis Halzen.

Program Manager:
Dr. Vladimir Papitashvili

Event Number: A-333-S
NSF/PLR Award 0937462

ASC POC/Implementer:
Leah Street / Paul Sullivan

Dr. Francis Halzen (Principal Investigator)
halzen@icecube.wisc.edu
http://icecube.wisc.edu

University of Wisconsin Madison
Physics Department
Madison, Wisconsin

Supporting Stations: South Pole Station
Research Locations: IceCube Counting Laboratory

Project Description:

The IceCube neutrino telescope transforms a cubic kilometer of ice into a Cherenkov detector. This long-term project is an international collaboration and the University of Wisconsin-Madison serves as the host institution, providing oversight and staffing. IceCube opens unexplored wavelength bands for astronomy using neutrinos as cosmic messengers.

Field Season Overview:

Twenty field team members will deploy to Amundsen-Scot South Pole Station. On-Ice activities for the 2012-2013 austral summer include maintenance and operations improvements to the existing infrastructure.

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Deploying Team Members:

- Ralf Auer
- Steven Barnet
- Angelo Briccetti
- Felipe Bustos
- Jacob Daughhetee
- David Glowacki
- James Haugen
- Bjoern Herold
- Albrecht Karle
- John Kelley
- Claudio Kopper
- Andrew Laundrie
- Sven Lidstrom
- Sven Lidstrom
- Larissa Paul
- Carlos Pobes Aranda
- Elizabeth Ratliff
- Benedikt Riedel
- James Roth
- Perry Sandstrom
- Paul Wisniewski

Return to Index

Project Details 2012-2013

E & B Experiment (EBEX)

EBEX payload and team just before the 2009 test flight from Ft. Sumner New Mexico. Photo courtesy of Shaul Hanany

Program Manager:
Dr. Vladimir Papitashvili

Event Number: A-146-M
NASA/NSF Agreement

ASC POC/Implementer:
Addie Coyac / Brian Johnson

Dr. Shaul Hanany (Principal Investigator)
hanany@umn.edu
http://www.physics.umn.edu/cosmology/ebex

University of Minnesota
Minneapolis, Minnesota

Supporting Stations: McMurdo Station
Research Locations: LDB Facility at Williams Field

Project Description:

EBEX (E & B Experiment) is a balloon-borne polarimeter designed to measure the intensity and polarization of the cosmic microwave background (CMB) radiation. EBEX will search for signals from the birth of the Universe and from gravitational bending of CMB radiation as it traverses the Universe enroute to the telescope. Measurements of the polarization of the CMB could probe an inflationary epoch that took place shortly after the big bang and significantly improve constraints on the values of several cosmological parameters. EBEX will also provide critical information about the level of polarized galactic dust that will be necessary for future CMB polarization experiments.

Field Season Overview:

EBEX will be launched on a stratospheric balloon from Williams Field as a part of the CSBF ballooning operations (Stepp A-145). The field party of seventeen will begin arriving at McMurdo in late October with the expectation that the instrument will be launched in December.

Deploying Team Members:

- Asad Aboobaker
- Francois Aubin

Project Indexes
Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites
Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season
Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

- Daniel Chapman
- Joy Didier-Scapel
- Matthew Dobbs (Co-PI)
- Shaul Hanany (PI)
- Kyle Helson
- Seth Hillbrand
- Jeffrey Klein
- Andrey Korotkov
- Michele Limon
- Kevin MacDermid
- Amber Miller (Co-PI)
- Michael Milligan
- Congxin Qiu
- Catherine Raach
- Britt Reichborn-Kjennerud
- Kyle Zilic

Return to Index

Project Details 2012-2013

Antarctic Search For Meteorites (ANSMET)

Program Manager:
Dr. Mark Kurz

Event Number: G-058-M

ASC POC/Implementer:
Leslie Blank / Jessica Jenkins

Dr. Ralph Harvey (Principal Investigator)
rph@cwru.edu
http://www.case.edu/ansmet

Case Western Reserve University
Department of Geological Sciences
Cleveland, Ohio

Supporting Stations: McMurdo Station
Research Locations: Southern Transantarctic Mountains

Project Description:

Since 1976, the Antarctic Search for Meteorites (ANSMET) has found more than 17,000 specimens. Meteorites do not fall preferentially on Antarctica; they're just easier to find on the white snow- and ice-scapes and because the ice transport and ablation process leads to accumulation in certain areas. One of those areas is the extreme southern end of the Transantarctic Mountains. This year, the ANSMET reconnaissance team will explore the Graves Nunataks and Upper Robison Glacier region and the Amundsen and Devil's Glacier region. Spanning about 100 kilometers from end to end, these areas are about 200 kilometers from South Pole Station and about 900 kilometers from McMurdo Station.

Field Season Overview:

The team will be equipped with standard remote field equipment, living in Scott tents and conducting searches on snowmobiles. CTAM and the Leveritt fuel cache delivered by the South Pole Traverse will be the staging points, along with the potential for open field LC130 landings on the Amundsen and Robison Glaciers to put in and take out the group.

Deploying Team Members:

- Andrew Beck
- Joe Boyce

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

- James Karner
- Marianne Mader
- John Schutt
- Thomas Sharp
- Meenakshi Wadhwa

Return to Index

Project Details 2012-2013

The Antarctic Search For Meteorites (ANSMET): Reconnaissance Team

Program Manager:
Dr. Alexandra Isern

Event Number: G-057-M

ASC POC/Implementer:
Chad Naughton / Jessica Jenkins

Dr. Ralph Harvey (Principal Investigator)
rph@cwru.edu
http://geology.cwru.edu/~ansmet/

Case Western Reserve University
Department of Geological Sciences
Cleveland, Ohio

Supporting Stations: McMurdo Station
Research Locations: Amundsen Glacier Camp, Amundsen Glacier Icefield, Devil's Glacier icefield, Mid-Robison Glacier Icefields, Mount Prestrud icefield, Mount Wisting icefield, Nodtvedt Nunataks icefield

Project Description:

The objectives of the Antarctic Search for Meteorites (ANSMET) reconnaissance team for this field season is to explore the potential for meteorite concentrations at a number of previously unvisited icefields in the southernmost Transantarctic Mountains. Eight targeted icefields are located in the Scott, Reedy, and Klein Glacier region, near the Graves Nunataks, the headwaters of the Robeson, Amundsen and Scott Glaciers, and in the Wisconsin Range.

Field Season Overview:

A field team of four will be equipped with standard remote field equipment, will live in Scott tents and conduct searches on snowmobiles. The team will be staged in the Central Trans-Antarctic Mountains (CTAM) and then shuttled out to target icefields by Twin Otter. Several camp moves are scheduled for mid-season.

Deploying Team Members:

- Joseph Boyce
- Ralph Harvey (PI)

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

- Katherine Joy
- Tomoko Nakamura
- Shaun Norman

Return to Index

Project Details 2012-2013

Austral High-Latitude Atmospheric Dynamics

Program Manager:
Dr. Vladimir Papitashvili

Event Number: A-110-M/S

ASC POC/Implementer:
Elizabeth Watson / Cara Sucher

Dr. Gonzalo Hernandez (Principal Investigator)
hernandez@uw.edu
http://cedarweb.hao.ucar.edu/

University of Washington
Earth and Space Sciences
Seattle, Washington

Supporting Stations: McMurdo Station, South Pole Station
Research Locations: Arrival Heights / ARO

Project Description:

This project continues long-term observation, characterization, and understanding of high-latitude atmospheric motions, in particular mesospheric motions and thermospheric persistent vertical winds near Arrival Heights and simultaneously with those at South Pole and Mount John, NZ. Wintertime mesospheric kinetic temperature observations have shown the presence of dynamical coupling between the stratosphere and the upper regions of the atmosphere in the Southern Hemisphere. Results indicate that the dynamical processes leading to the stratospheric warming or cooling are already in place during the austral winter and the early mesospheric signals lead to the potential capability to estimate the springtime ozone hole.

Field Season Overview:

The major activities are the observational phase during the austral winter and calibration during the rest of the year. Year-round support is provided by the staff Research Associates (RA) at McMurdo and South Pole Stations. Four participants will deploy during the austral summer to maintain, repair, and calibrate the equipment as needed.

Deploying Team Members:

- Stephen Barlow

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

- Michael McCarthy (Co-PI)
- Bryan Venema

Return to Index

Project Details 2012-2013

Ocean Acidification: Integrated Approaches To Understanding Effects On Antarctic Sea Urchins, Sterechinus Neumayeri

Program Manager:
Dr. Diana Nemergut

Event Number: B-134-M

ASC POC/Implementer:
John Rand / Cara Sucher

Dr. Gretchen Hofmann (Principal Investigator)
hofmann@lifesci.ucsb.edu
http://hofmannlab.msi.ucsb.edu/

University of California Santa Barbara
Department of Ecology, Evolution, Marine Biology
Santa Barbara, California

Supporting Stations: McMurdo Station
Research Locations: Cape Evans / McMurdo Jetty / Crary Lab

Project Description:

This project studies the effects of ocean acidification on embryos and larvae of the Antarctic sea urchin, Sterechinus neumayeri. One group of larvae will be raised under high carbon dioxide (CO2) conditions to mimic the high CO2/low pH ocean expected in the future. Another group will be raised under present-day ambient conditions. The physiology and response of two groups will be compared with the aim of understanding how the larvae are able to calcify and make their calcium carbonate skeletons at low pH. In the lab researchers will prepare samples to assess changes in protein content of the larval skeleton. RNA samples will enable them to use a DNA microarray during subsequent work at their home institution to assess patterns of gene expression for genes involved in biomineralization or in other important biochemical pathways. Other research in the lab includes measuring oxygen consumption with a micro-respirometry unit, and testing thermotolerance of the embryos and larvae.

Field Season Overview:

This is the project's third field season and the activites will be similar to the fieldwork of the first season. Five researchers will deploy to work in the lab and in the field. As early in October as practicable, staff divers will collect adult sea urchins at Cape Evans while the research team collects

Project Indexes
Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites
Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season
Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

environmental samples. Research team members will transport the urchins back to the lab in a timely fashion to commence the experimental phase of the project. Accompanied by the research team, staff divers will also retrieve a pH sensor (SeaFETs) from its over-winter deployment at the jetty dive hut. Project participants' arrivals and departures will coincide with their roles during the collection and experimental phases of the project.

Deploying Team Members:

- Gretchen Hofmann (PI)
- Lydia Kapsenberg
- Amanda Kelley
- Olivia Turnross
- Pauline Yu

Return to Index

Project Details 2012-2013

Operation And Maintenance Of A CTBT Radionuclide Monitoring Station At Palmer Station

Program Manager:
Mr. Pat Smith

Event Number: T-998-P

ASC POC/Implementer:
John Rand / Philip Spindler

Mr. Bouvard NMI Hosticka (Principal Investigator)
bh@virginia.edu
http://www.ctbto.org

University of Virginia
Charlottesville, Virginia

Supporting Stations: Palmer Station
Research Locations: Palmer Station

Project Description:

This project services and calibrates the automated radionuclide air-particulate monitoring system in the International Monitoring Station (IMS) building (Terra Lab) at Palmer station.

Field Season Overview:

Equipment for this project will be supported by the Palmer Station RA. There will be one site visit by an engineer or scientist for maintenance and upgrades to the equipment. Samples will be sent on a quarterly basis to the home institution in Vienna, Austria. Ocassionally samples will also be sent to a laboratory elsewhere is the world for reanalysis.

Deploying Team Members:

- Bouvard Hosticka (PI)

Return to Index

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Project Details 2012-2013

Collaborative Research: MRI-R2 Instrument Development Of The Askaryan Radio Array, A Large-Scale Radio Cherenkov Neutrino Detector At The South Pole

Program Manager:
Dr. Vladimir Papitashvili

Event Number: A-107-S
NSF/PLR Award 1002485

ASC POC/Implementer:
Elizabeth Watson / Paul Sullivan

Dr. Albrecht Karle (Principal Investigator)
Karle@icecube.wisc.edu
http://ara.physics.wisc.edu

University of Wisconsin Madison
Department of Physics
Madison, Wisconsin

Supporting Stations: South Pole Station
Research Locations: Dark Sector

Project Description:

Dr. Karle and his international collaborators will probe the nature and cosmic evolution of the accelerators of the highest-energy cosmic rays by observing ultra-high-energy neutrinos produced when cosmic rays interact with the microwave background. At these very high energies, neutrinos can be detected in dense, radio-frequency-transparent media, such as ice, by the Askaryan effect. Its origin is an excess negative charge that builds up when electrons are swept out along a shower front advancing relativistically through the ice. The thickness (estimated to be almost two miles) and exceptional radio-frequency clarity makes the south polar ice cap an ideal place to study ultra high energy neutrinos. This project will develop and deploy a limited number of radio detector stations which will provide the basis for development of a much larger array. The work builds upon past and current neutrino observations including the IceCube and AMANDA Cherenkov observatories and the RICE and ANITA radio Askaryan telescopes in Antarctica as well as the Pierre Auger cosmic ray observatory in western Argentina.

Field Season Overview:

During the 2012-13 Austral summer, two ARA stations will be deployed in the

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

ice approximately four kilometers grid-west from the IceCube Lab (ICL). A cable will connect the stations to the existing wind turbine at location WT3. Each station comprises six holes of 6-inch diameter drilled to a depth of 200 meters. The holes will be pumped dry. Detectors will be deployed into the bottom 25 meters of each hole. Four antennas and data acquisition equipment (DAQ) will be installed at the surface. Each station will be calibrated and an additional two calibration holes will be drilled 300 meters and 600 meters from ARA2. A remote power system comprising a wind turbine, solar panels and backup batteries will be installed at ARA 1 (deployed in 2011-12). Maintenance will be performed on the existing remote power installations.

Deploying Team Members:

- Terry Benson
- Chih-ching Chen
- Jonathan Davies
- Michael DuVernois
- Darrell Hamilton
- Yael Hagar Landsman
- Yael Hagar Landsman
- Thomas Meures
- Christian Miki
- Jiwoo Nam
- David Pernic
- Ken Ratzlaff
- Michael Richman
- Robert Young

Return to Index

Project Details 2012-2013

Dry Valley Seismic Project

Program Manager:
Dr. Mark Kurz

Event Number: G-078-M
NSF/PLR-DoD MOA

ASC POC/Implementer:
John Rand / Jessica Jenkins

Dr. Robert Kemerait (Principal Investigator)
kemerait@tt.aftac.gov
http://www.afisr.af.mil/units/aftac/index.asp

United States Air Force
AFTAC
Patrick AFB, Florida

Supporting Stations: McMurdo Station
Research Locations: Dry Valleys

Project Description:

The Dry Valleys seismic project monitors regional and global seismicity. The Dry Valleys stations are part of the Air Force Technical Applications Center's (AFTAC) southern network, which accumulates near-real-time data from nine locations in the southern hemisphere. The data is telemetered to the National Data Center in Florida and made available to the international scientific community.

Field Season Overview:

Participants will travel by helicopter to field camps at Bull Pass and Mount Newall where they will refuel the diesel generators, perform annual engine, electrical, and technical, maintenance and inspections

Deploying Team Members:

- Christoper Dale
- Brian Fox
- Joseph King
- David Mose
- Scott Robertson (Team Leader)

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Return to Index

Project Details 2012-2013

Temporal Variability In Natural And Anthropogenic Disturbance Of McMurdo Station

Program Manager:
Dr. Polly Penhale

Event Number: B-518-M

ASC POC/Implementer:
Addie Coyac / Cara Sucher

Dr. Mahlon Kennicutt (Principal Investigator)
m-kennicutt@tamu.edu
http://antarctica.geog.tamu.edu

Texas A & M University
Oceanography
College Station, Texas

Supporting Stations: McMurdo Station
Research Locations: On Station

Project Description:

Antarctica represents perhaps one of the most carefully tended and strictly monitored habitats on Earth. Aside from the manifest desire to protect the flora, fauna and the atmosphere of a relatively pristine environment, there is the value the extreme southern latitudes provide as a virtual baseline barometer of global pollution. The Antarctic Treaty's Protocol on Environmental Protection, supplemented by the policies and practices of the nations who work and do science there, have combined to focus scrutiny on any anthropogenic impacts that can be foreseen or detected. This project collects a system of observations that should enable scientists to be more aware of any such impacts on both marine and terrestrial habitats in and around McMurdo Station. The observations are located precisely and tracked over time. Researchers use geographic information systems (GIS) techniques and geostatistical methods to organize these diverse data sets into a coherent, coordinated framework. The results should provide additional fundamental scientific information for developing a long-term strategy to document and minimize the impacts of future science and support operations on Antarctic resources and values.

Field Season Overview:

Four participants will be based in McMurdo and travel to local sites to take measurements, record observations, and take samples. The field team will

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

have support from UNAVCO for a backpack GPS unit, from contract divers for sample collecting, from MEC for pooled vehicle use, and from Crary Lab for space in which to perform toxicity tests, a staging area, and office space.

Deploying Team Members:

- Andrew Klein
- Terence Palmer
- Stephen Sweet

Return to Index

Project Details 2012-2013

Benthic-Pelagic Coupling In An Intact Ecosystem: The Role Of Top Predators In McMurdo Sound

An Adelie penguin investigates the remotely operated vehicle SCINI. Photo credit: Stacy Kim.

Program Manager:
Dr. Charles Amsler

Event Number: B-174-M
NSF/PLR Award 0944747

ASC POC/Implementer:
John Rand / Cara Sucher

Dr. Stacy Kim (Principal Investigator)
skim@mlml.calstate.edu
http://scini-penguin.mlml.calstate.edu/

San Jose State University
Moss Landing Marine Laboratories
Moss Landing, California

Supporting Stations: McMurdo Station
Research Locations: Cape Royds / Ice Runway / Sea Ice / Crary Lab

Project Description:

This project will focus on food web interactions of three dominant predators, Adélie penguins, minke whales, and the fish-eating Ross Sea killer whales, all of which exert foraging pressure on their main prey—crystal krill and silver fish. The annual arrival of an icebreaker to open a channel through fast ice to McMurdo Station (20 km from ice edge) provides a large-scale “natural” experiment for investigations of predator effects on prey distributions. Thousands of penguins and dozens of whales follow the ship, foraging to either side of the channel to the extent of their breath-holding ability. This work will provide a baseline study that is a necessary start to a multi-disciplinary investigation.

Field Season Overview:

Through Jiffy-drilled holes in the fast ice, project researchers will deploy SCINI (Submersible Capable of under Ice Navigation and Imaging), a video- and acoustic-capable remotely-operated vehicle (ROV) equipped with environmental sensors. They will collect ice cores (using a SIPRE auger) and water samples (using Niskin bottles) to quantify the abundance and distribution of phytoplankton, sea ice biota, and prey before the icebreaker arrives. The sampling protocol will be repeated three times: Before the

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

channel is broken, during channel work and immediately after. During the entire field deployment, project team members and their collaborators (Ainley B-0310) will tag and track penguins and whales to examine the interactions between upper and lower trophic levels. Project divers will dive at established sites in McMurdo Sound to sample shallow benthic communities to continue their long-term dataset.

Deploying Team Members:

- Heather Broadbent
- David Burnett
- Clint Collins
- Kendra Daly (Co-PI)
- John Durban
- Stacy Kim (PI)
- Robert Pitman
- Leslie Schwierzke-Wade
- Eric Stackpole

Return to Index

Project Details 2012-2013

Collaborative Research: BICEP2 And SPUD - A Search For Inflation With Degree-Scale Polarimetry From The South Pole

The BICEP2 telescope with the 10-meter aperture South Pole Telescope visible in the background. Photo Credit: Steffen Richter.

Program Manager:
Dr. Vladimir Papitashvili

Event Number: A-039-S

ASC POC/Implementer:
Elizabeth Watson / Paul Sullivan

Dr. John Kovac (Principal Investigator)
jmkovac@cfa.harvard.edu
http://www.cfa.harvard.edu/CMB/bicep2/

Harvard University
Cambridge, Massachusetts

Supporting Stations: South Pole Station
Research Locations: DSL (Dark Sector Lab)

Project Description:

The Cosmic Gravitational-wave Background (CGB) imprints a signature in the polarization of the Cosmic Microwave Background (CMB). Detecting that signature is arguably the most important goal in cosmology today. BICEP is the first CMB polarimeter specifically designed to search for the signature of the CGB. Since 2006, BICEP has mapped about 2% of the sky that is uniquely free of galactic confusion. SPUD (Pryke A-149-S, aka "The Keck Array") is an array of receivers similar to BICEP2 and together they provide a further increase in mapping speed and the possibility of multiple frequencies. These receivers are more compact, use pulse tube cryogenic refrigerators rather than liquid helium, and share the former DASI mount near MAPO. This work comprises two projects: Clem Pryke's SPUD/Keck Array component (A-149), and John Kovac's BICEP2 component (A-039).

Field Season Overview:

Work on BICEP2 includes final astronomical observations, calibrations, shutdown and decommissioning the instrument, and packing and shipping everything for retrograde. In early November, the first BICEP2 team members will arrive to begin season-end calibrations, inventory, and packing

Project Indexes
Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites
Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season
Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

activity. Final observations and calibrations are contingent on the remaining helium supply from the winter lasting into December. Researchers expect to allow BICEP2 to warm no later than December 24, and then disassembled. This delicate work will take place entirely within the BICEP area of the DSL.

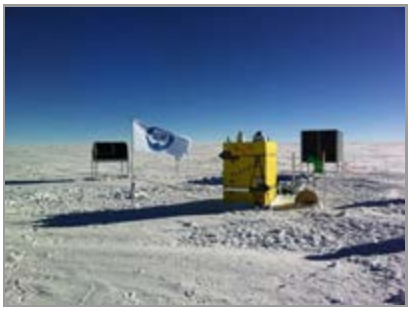
Deploying Team Members:

- Colin Bischoff
- Immanuel Buder
- Kirit Karkare
- Jonathan Kaufman
- Hien Nguyen
- Steffen Richter
- Chin Lin Wong

Return to Index

Project Details 2012-2013

High Elevation Antarctic Terahertz (HEAT) Telescopes For Dome A And Ridge A



Antarctica's newest astronomical observatory is a joint collaboration between University of Arizona and the University of New South Wales in Australia. The flying of the SCAR flag (Scientific Committee for Antarctic Research) supplements wind speed and direction obtained from a 15-meter weather tower. Photo Credit: Craig Kulesa.

Program Manager:
Dr. Vladimir Papitashvili

Event Number: A-364-S
NSF/PLR Award 0944335

ASC POC/Implementer:
Samina Ouda / Paul Sullivan

Dr. Craig Kulesa (Principal Investigator)
ckulesa@email.arizona.edu
http://soral.as.arizona.edu/heat/

University of Arizona Tucson
Steward Observatory
Tucson, Arizona

Supporting Stations: South Pole Station
Research Locations: Dome A / Ridge A

Project Description:

This project is a joint US/Australian venture to build and deploy a fully automated, 0.6-meter terahertz astronomical observatory for remote operation at Ridge A – the highest elevation on the Antarctic Plateau. High Elevation Antarctic Terahertz (HEAT) will observe in the 350 micron (0.8 THz) through 150 micron (2 THz) atmospheric windows, the latter of which is unique to Ridge A. HEAT will initiate a Galactic Plane survey of atomic carbon, ionized carbon and carbon monoxide to explore the Galaxy-wide evolution of gas and stars, the formation and destruction of interstellar clouds and the dynamics of star-forming regions. This will be the largest survey of its kind and will serve as a pathfinder for future astronomical observatories on the Plateau. The telescope will be mounted on top of the Australian University of New South Wales' PLATeau Observatory (PLATO)

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

module that provide housing for the instrument's electronics and diesel engines used to generate electrical power during winter observations. PLATO and the telescope will operate autonomously for over a year at a time, with commands and data being transmitted from and to the home institutions via Iridium satellites daily.

Field Season Overview:

This austral summer researchers will deploy the second generation HEAT telescope and refuel and refurbish the Plateau Observatory (PLATO). The field party of American and Australian grantees will be based at Amundsen-Scott South Pole Station where they will acclimate while assembling and testing the new instrument. A lesser number of team members will travel to Ridge A by Twin Otter for a 2-4 day field deployment intended to maximize the probability of success given the remoteness of the site, attention to safety, and accounting for difficult working conditions at altitude.

Deploying Team Members:

- Michael Ashley
- Colin Bonner
- Craig Kulesa (PI)
- Jon Lawrence
- David Lesser
- John Storey
- Abram Young

Return to Index

Project Details 2012-2013

Outstanding Questions On Auroral Radiation Fine Structure

Program Manager:
Dr. Vladimir Papitashvili

Event Number: A-128-S
NSF/PLR Award 1043230

ASC POC/Implementer:
Samina Ouda / Paul Sullivan

Dr. James LaBelle (Principal Investigator)
jlabelle@einstein.dartmouth.edu
http://www.dartmouth.edu/~spacephy/

Dartmouth College
Department of Physics & Astronomy
Hanover, New Hampshire

Supporting Stations: South Pole Station
Research Locations: B2/V8 vault

Project Description:

Energetic plasma interacting with the geomagnetic field in the near-Earth space (geospace) environment emits electromagnetic waves across the radio spectrum. Ground-based measurements of these waves are used as diagnostic tools to investigate various processes in geospace. This investigation takes advantage of an existing network of radio receivers at AGO sites (Weatherwax A-112) located from -70 to -85 degrees of invariant geomagnetic latitude and operating in the frequency range from extra-low to high frequencies. The Antarctic continent is ideally suited for these types of natural radio-wave experiments since it is largely devoid of such anthropogenic electromagnetic interference as power-line harmonics and radio-frequency broadcast transmissions. Researchers will focus on studies of three geophysically important plasma waves. Chorus waves are believed to be a major driver of radiation belt electron acceleration and loss. The other two waves, auroral hiss and auroral kilometric radiation (AKR), are generated in the auroral acceleration region and have the potential to be used for remote sensing of this complex and poorly understood near-Earth region.

Field Season Overview:

For the direction-finding receiver, data collection occurs during the austral winter from March to September. Using the Internet, it is controlled remotely

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

from Dartmouth. The swept frequency receiver collects data year-round. This instrument automatically transfers its data to the central server at South Pole for onward transfer to the US. The contract Research Associate (RA) monitors and maintains the equipment locally.

Return to Index

Project Details 2012-2013

Application Of The AGO Network To Energy Transfer In The Radiation Belts And Remote Sensing Of Auroral Plasma Processes

Program Manager:
Dr. Vladimir Papitashvili

Event Number: A-125-S
NSF/PLR Award 1141817

ASC POC/Implementer:
Samina Ouda / Paul Sullivan

Dr. James LaBelle (Principal Investigator)
jlabelle@einstein.dartmouth.edu
http://www.dartmouth.edu/~spacephy/labelle_group

Dartmouth College
Department of Physics & Astronomy
Hanover, New Hampshire

Supporting Stations: South Pole Station
Research Locations: AGO sites

Project Description:

This project addresses questions about energy transfer in the Earth's radiation belts and auroral plasma physics. Energetic plasma interacting with the geomagnetic field in the near-Earth space (geospace) environment emits electromagnetic waves across the radio spectrum, and ground-based measurements of these waves are used as diagnostic tools to investigate various processes in geospace. This investigation takes advantage of an existing network of radio receivers at AGO sites (Weatherwax A-112) located from -70 to -85 degrees of invariant geomagnetic latitude and operating in the frequency range from extra-low to high frequencies. The Antarctic continent is ideally suited for these types of natural radio wave experiments since it is largely devoid of anthropogenic electromagnetic interference such as power line harmonics and radio frequency broadcast transmissions. The project will focus on studies of three geophysically important plasma waves: Chorus waves, auroral hiss and auroral kilometric radiation (AKR). Chorus waves are believed to be a major driver of radiation belt electron acceleration and loss. The auroral hiss and AKR waves are generated in the auroral acceleration region and have the potential to be used for remote sensing of this complex and poorly understood near-Earth region.

Field Season Overview:

Project Indexes
Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites
Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season
Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

This new research requires an upgrade to the existing LF/MF/HF receivers in some of the AGOs, and maintenance of the Stanford University VLF receiver at the South Pole. The digital receivers, antenna materials, and cables will be shipped to Amundsen-Scott South Pole station and AGO personnel replace the existing receivers with new equipment at the remote sites. Going forward, this project will be responsible for the Stanford University VLF receiver that was formerly maintained under Weatherwax A-111.

Return to Index

Project Details 2012-2013

Antarctic Automatic Weather Station (AWS) Program

Thirty meters tall, the "Alexander Tall Tower!" automatic weather station was erected on the Ross Ice Shelf in February 2011. Photo Credit: John Cassano and Alice Du Vivier.

Program Manager:
Dr. Peter Milne

Event Number: O-283-M

ASC POC/Implementer:
John Rand / Elizabeth Kauffman

Dr. Matt Lazzara (Principal Investigator)
mattl@ssec.wisc.edu
http://amrc.ssec.wisc.edu/

University of Wisconsin Madison
Space Science and Engineering Center/AMRC
Madison, Wisconsin

Supporting Stations: McMurdo Station
Research Locations: AWS sites

Project Description:

The Antarctic Automatic Weather Station (AWS) network is the largest in the Antarctic and has the broadest spatial coverage. As the AWS program reaches its 32nd year, the primary focus is measuring Antarctica's surface climatology using the lengthy datasets (20- to 30-years in some cases) collected by the stations. A second focus is an investigation of the surface wind regime of the Ross Ice Shelf. In the Antarctic, short, observational records and large spacing between available observations has limited our ability to observe and detect climate change. The AWS network is now capable of providing critical observational records that will allow researchers to assess the near-surface climate of the Antarctic and begin to identify signs of climate change in the Antarctic. AWS measurements also provide the verification for satellite studies and model forecasts.

Field Season Overview:

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

This year a field party of three will deploy to McMurdo Station to visit and repair stations on the Ross Ice Shelf, in West Antarctica and in the local McMurdo area. Three stations in West Antarctica may be removed. The continued transition of local McMurdo stations to Freewave radio modems will help reduce data telemetry costs. This project collaborates with other NSF grantees as well as other international programs. The team visits sites that report problems or cease transmitting during the austral winter. They receive support from riggers, fixed-wing and helicopter operations.

Deploying Team Members:

- Matt Lazzara (PI)
- David Mikolajczyk
- Lee Welhouse (Team Leader)

Return to Index

Project Details 2012-2013

Studies Of Turbulence And Mixing In The Antarctic Circumpolar Current, A Continuation Of DIMES

Program Manager:
Dr. Peter Milne

Event Number: O-124-L
NSF/OCE Award 1232962

ASC POC/Implementer:
Addie Coyac

Dr. James Robert Ledwell (Principal Investigator)
jledwell@whoi.edu
http://dimes.ucsd.edu/

Woods Hole Oceanographic Institution
Dpt. of Applied Ocean Physics & Engineering
Woods Hole, Massachusetts

Supporting Stations: ARSV Laurence M. Gould

Research Locations:

Project Description:

The objective of this project is to sample a tracer that was released in the Antarctic Circumpolar Current on a surface of constant neutral density near 58 degrees S Latitude, 106 degrees W Longitude in 2009. The tracer is making its way through the Drake Passage, into the Scotia Sea, and beyond into the Argentine Basin as it spreads horizontally and vertically. The ultimate objective of the tracer experiment is to measure this spreading. The depth of the tracer cloud varies from about 2,000 meters to the north of the Subantarctic Front to less than 300 meters along the Antarctic continental slope. The tracer is trifluoromethyl sulfur pentafluoride and is analyzed in seawater samples on board the RV/IB Nathaniel B. Palmer using a gas chromatograph with electron capture detector.

Field Season Overview:

Researchers will sail on the ARSV Laurence M. Gould on a crossing of Drake Passage. They will conduct numerous conductivity-temperature-depth (CTD) casts at various stations.

Deploying Team Members:

- Brian Guest
- Leah Houghton

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

- James Ledwell (PI)

Return to Index

Project Details 2012-2013

McMurdo LTER - Geochemistry: Increased Connectivity In A Polar Desert Resulting From Climate Warming: McMurdo Dry Valley LTER Program

Julie Brown is preparing to collect water samples at Delta Stream in Taylor Valley. Photo Credit: Kathy Welch.

Program Manager:
Dr. Lisa Clough

Event Number: B-509-M
NSF/PLR Award 1115245

ASC POC/Implementer:
Elizabeth Watson / Cara Sucher

Dr. W. Berry Lyons (Principal Investigator)
lyons.142@osu.edu
http://mcmlter.org

Ohio State University
Byrd Polar Research Center
Columbus, Ohio

Supporting Stations: McMurdo Station
Research Locations: Dry Valleys

Project Description:

In 1980, the National Science Foundation (NSF) funded the US Long Term Ecological Research (LTER) Network, a collaborative effort involving more than 1,800 scientists and students. The McMurdo LTER is one of 26 sites that investigates ecological processes over long temporal and broad spatial scales. The McMurdo LTER program is an inter-disciplinary and multi-disciplinary study of the aquatic and terrestrial ecosystems in the ice-free McMurdo Dry Valleys. This six-year award cycle comprises seven collaborative projects: Andrew Fountain B-504, John Priscu B-505, Diane McKnight B-506, Diana Wall B-507, Jeb Barrett, B-508, Berry Lyons B-509, and Peter Doran B-511. This project is the “geochemistry” component of the McMurdo LTER. Researchers monitor the inorganic geochemistry of waters and solid samples collected from the glaciers, streams, ponds, lakes and landscape of the Dry Valleys. They continue to study the upland seeps and ponds to gain a better understanding of their hydrologic and geochemical controls.

Field Season Overview:

Project Indexes
Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites
Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season
Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Four participants will collect water, snow, and sediment samples. The sampling will be done on foot or by taking day trips by helicopter from McMurdo or Lake Hoare to the sampling sites. They will work with the limno and stream teams at Lakes Hoare, Bonney, F6, and Fryxell. At upland pond sites within the Dry Valleys team members will collect additional water samples. They will return to Crary Lab to perform chemical analysis of lake, stream, glacier, and other samples.

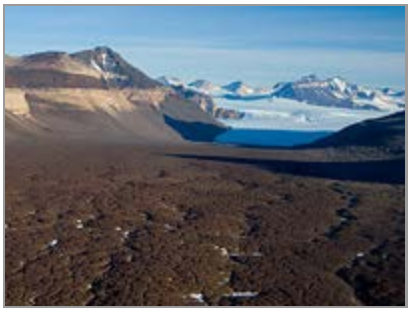
Deploying Team Members:

- Kelsey Bisson
- W. Berry Lyons (PI)
- Kathy Welch (Team Leader)

Return to Index

Project Details 2012-2013

Quantifying Surface Processes Above Buried Ice In Antarctica: Implications For Terrestrial Climate Change And Glaciation On Mars



Program Manager:
Dr. Alexandra Isern

Event Number: G-054-M

ASC POC/Implementer:
John Rand / Jessica Jenkins

Dr. David R Marchant (Principal Investigator)
marchant@bu.edu
http://people.bu.edu/marchant/index.html

Boston University
Department of Earth Sciences
Boston, Massachusetts

Supporting Stations: McMurdo Station
Research Locations: Asgard Range / Beacon and Kennar Valleys

Project Description:

Buried glaciers of the McMurdo Dry Valleys, Antarctica (MDV) represent a potentially far-reaching archive of ancient atmosphere. Unlike relatively fast-flowing ice sheets that continually move toward margins, stagnant and/or slow-moving debris-covered glaciers may contain ice several million years in age; by way of comparison, the oldest ice yet cored from the East Antarctic Ice Sheet is about one million years old. However, even with their documented potential to register long-term climate change, and to serve as proxies for very ancient buried ice deposits on Mars, there has been surprisingly little quantification of the geologic and geomorphologic processes that both preserve and modify debris-covered glaciers in Antarctica. Unknown are important details of ice burial, ice ablation, and the evolution of textural facies within sublimation tills that play critical roles in maintaining and/or modifying buried-glacier ice. Overcoming these deficiencies are primary goals of this proposal. Researchers will develop a suite of quantitative models that elucidate landscape evolution above buried glacier ice, specifically above the Mullins Glacier, and nearby glaciers in the Quatermain Mountains and Asgard Range. The three central objectives are (1) Document the thickness and spatial trends in englacial debris within buried glaciers using Ground Penetrating Radar (GPR).; (2) Document variation in microclimate and its impact on sublimation till development.; and

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

(3) Develop quantitative surface-process models for landscape evolution above buried ice.

Field Season Overview:

The first phase of the fieldwork includes GPR experiments on buried glaciers in the Quartermain Mountains (Beacon Valley, Mullins Valley, Kennar Valley) and Asgard Range (Koenig Valley and Sessruminir Valley). This is only possible during the months of November and December, when colder atmospheric temperatures prevent surface snowmelt. In January, the field party will conduct soil-moisture and melting measurements in the Quartemain Mountains, the Asgard Range and, later in the season, on buried-ice deposits in lower Taylor Valley, Brown Peninsula, Black Island, and coastal regions of Mount Discovery. A reduced team of two will continue studies in the field until the end of January. Throughout the field season from the Beacon Valley base camp, reconnaissance day-trips will be conducted to nearby locations.

Deploying Team Members:

- Jackie Hams
- Jacquelyn Hams
- Alistair Hayden
- Jennifer Lamp
- Sean Mackay
- David Marchant (PI)

Return to Index

Project Details 2012-2013

Palmer Long Term Ecological Research (LTER): Looking Back In Time Through Marine Ecosystem Space, Physical Oceanography Component

Program Manager:
Dr. Lisa Clough

Event Number: B-021-L
NSF/PLR Award 0823101

ASC POC/Implementer:
Samina Ouda / Robert Kluckhohn

Dr. Doug Martinson (Principal Investigator)
dgm@ldeo.columbia.edu
http://www.lternet.edu/sites/pal/

Columbia University
Lamont-Doherty Earth Observatory
Palisades, New York

Supporting Stations: ARSV Laurence M. Gould
Research Locations: West Antarctic Peninsula

Project Description:

This LTER component takes responsibility for processing and analyzing hydrographic data. The data are used to describe the hydrography and circulation in the Palmer area in particular, and the western Antarctic Peninsula region in general, with a focus on developing circulation and coupled physical-biological models. The Antarctic shelf regions are influenced by circumpolar deep waters and the circulation pattern in the region shows large-scale flows influenced by topography.

Field Season Overview:

No project participants deploy. During the annual 28-day LTER cruise onboard the Laurence M. Gould (LMG) LTER participants conduct bioacoustic surveys using the Biosonics DT-X echo sounder at least three times per week. The goal is to identify krill patches and gain an understanding of krill distribution patterns in the nearshore.

Return to Index

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

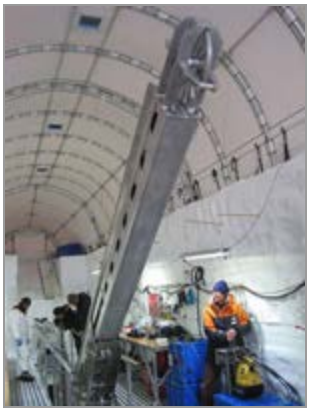
2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Project Details 2012-2013

Roosevelt Island Climate Evolution (RICE) Project



The RICE deep drilling trench on Roosevelt Island. The deep ice core drill was built by the New Zealand lead team. Photo by Tom Beers, Climate Change Institute, University of Maine.

Program Manager:
Dr. Julie Palais

Event Number: I-173-M

ASC POC/Implementer:
John Rand / Elizabeth Kauffman

Dr. Paul Mayewski (Principal Investigator)
paul.mayewski@maine.edu
http://www.victoria.ac.nz/antarctic/research/research-prog/rice/

University of Maine
Climate Change Institute
Orono, Maine

Supporting Stations: McMurdo Station
Research Locations: Roosevelt Island

Project Description:

This award supports a project to analyze a deep ice core which will be drilled by a New Zealand research team at Roosevelt Island. Researchers will process the ice core at very high resolution. Results from the RICE deep ice core are expected to provide a 30,000-year and possibly 150,000-year long extremely high-resolution view of climate change in the Ross Sea Embayment. Ice core processing and analysis will be performed jointly by University of Maine and the collaborators from New Zealand. Co-registered sampling for all chemical analyses will be accomplished by a joint laboratory effort at the IGNS NZ ice core facility using a continuous melter system developed by the University of Maine. The RICE deep ice core record will help unravel the significance of multi-millennial underpinning for climate change and in the understanding of observed and projected climate change in light of current dramatic human impact on Antarctica and the Southern Ocean.

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Field Season Overview:

Most of the logistics, including the deep drill, drillers, camp logistics staff, field transport, and accommodations will be provided by ANZ. USAP will provide airfare and physical qualification services to two deploying participants.

Deploying Team Members:

- Tom Beers

Return to Index

Project Details 2012-2013

McMurdo LTER - Streams: Increased Connectivity In A Polar Desert Resulting From Climate Warming: McMurdo Dry Valley LTER Program

The "Stream Team" and environmental support staff remove a stream gage at Priscu Stream in response to rising Lake Bonney water surface from recent high flow seasons. Photo Credit: Chris Jaros.

Program Manager:
Dr. Lisa Clough

Event Number: B-506-M
NSF/PLR Award 1115245

ASC POC/Implementer:
Elizabeth Watson / Cara Sucher

Dr. Diane McKnight (Principal Investigator)
diane.mcknight@colorado.edu
http://www.mcmlter.org/

University of Colorado Boulder
Institute of Arctic and Alpine Research (INSTAAR)
Boulder, Colorado

Supporting Stations: McMurdo Station
Research Locations: Dry Valleys / F6 / Garwood and Wright Valleys / Lakes Bonney, Fryxell, Hoare and Miers

Project Description:

In 1980, the National Science Foundation (NSF) funded the US Long Term Ecological Research (LTER) Network, a collaborative effort involving more than 1,800 scientists and students. The McMurdo LTER is one of 26 sites that investigates ecological processes over long temporal and broad spatial scales. The MCM LTER program is an inter-disciplinary and multi-disciplinary study of the aquatic and terrestrial ecosystems in the ice-free McMurdo Dry Valleys. This six-year award cycle comprises seven collaborative projects: Andrew Fountain B-504, John Priscu B-505, Diane McKnight B-506, Diana Wall B-507, Jeb Barrett, B-508, Berry Lyons B-509, and Peter Doran B-511. This project is the “streams” component of the MCM LTER. Researchers operate a network of 16 stream flow gauges, collect water quality samples from 30 streams and make hydrologic measurements.

Field Season Overview:

Project Indexes
Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites
Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season
Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Six participants will be the primary occupants of the F6 field camp. Most monitoring will take place in Taylor Valley, with monitoring continuing in Wright and Miers Valleys. New gauging sites and algal monitoring transects will be established in Miers and Garwood Valleys. Team members will continue to upgrade temperature and specific conductance probes at several gauges in order to minimize the loss of data collected during the season. Activities to relocate upstream gauging sites that are at risk of being submerged due to lake level rise will be conducted for Aiken Creek. An Iridium based telemetry network makes real time data available for three lakes, seven streams, and 13 meteorological stations. This year two Iridium base stations and additional remote data loggers will be added. The team will continue to measure lake levels at Lakes Joyce, House, Vida, Vanda, and Don Juan Pond, visit 16 stream sites to collect algal mat and water quality samples, and conduct LIDAR surveys.

Deploying Team Members:

- Devin Castendyk
- Alexandria Fair
- Chris Jaros
- Tyler Kohler
- Diane McKnight (PI)
- Adam Wlostowski

Return to Index

Project Details 2012-2013

Wondering Gondwana

Program Manager:
Mr. Peter West

Event Number: W-491-M

ASC POC/Implementer:
Elizabeth Watson / Jessica Jenkins

Ms. Larissa Min (Principal Investigator)
larissa@breakingenglish.org
http://www.breakingenglish.org

Seattle, Washington

Supporting Stations: McMurdo Station
Research Locations: Cape Royds / Lower Erebus Hut / McMurdo Dry Valleys / South Pole day trip / WAIS Divide Field Camp

Project Description:

By juxtaposing a non-fictional narrative of scientists working in Antarctica with the experiences of a fictional girl living in poverty in the Amazon, Ms. Min will explore Antarctica from a developing world's perspective. Like the people belonging to these ecosystems, the regions themselves are interlinked and interdependent in many ways, yet they occupy different functions in the world – one a place of scientific exploration and wonder, the other a place of development, extraction and capitalization. Using both words and imagery, the artist will place both regions and realities in relationship to each other, thus contrasting differences and revealing connections. With this project, Ms Min hopes to reframe how people understand and perceive places and people formerly part of one Gondwana. Ultimately, she will explore and share with audiences how these regions and "poles of experiences" are affected by the human capacity to imagine them, and the eventual impact those imaginings (or lack thereof) have in the state of the world.

Field Season Overview:

This project will take the artist to several field camps in various places in Antarctica to accrue first-hand impressions and experiences, and to observe and interact with science teams. She will gather materials and record observations using writing, photography, audio, and video. From these source materials Ms Min will construct a creative narrative of Antarctica and its scientific pursuits.

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Deploying Team Members:

- Larissa Min (PI)

Return to Index

Project Details 2012-2013

Super Trans-Iron Galactic Element Recorder (SuperTIGER)

Program Manager:
Dr. Vladimir Papitashvili

Event Number: A-142-M
NASA/NSF Agreement

ASC POC/Implementer:
Addie Coyac / Brian Johnson

Dr. John Mitchell (Principal Investigator)
john.w.mitchell@nasa.gov
http://physics.wustl.edu/supertiger/

National Aeronautics and Space Administration
Goddard Space Flight Center
Greenbelt, Maryland

Supporting Stations: McMurdo Station
Research Locations: LDB Facility at Williams Field

Project Description:

Super-TIGER builds on the heritage of the smaller Trans-Iron Galactic Element Recorder (TIGER) flown from Williams Field in 2001 and 2003. This next generation version is a large-area instrument that will measure the elemental abundances of cosmic rays from Zinc to Molybdenum. The instrument is capable of detecting an unprecedented combination of individual-element resolution and statistical precision. These spectra will permit a sensitive test of the hypothesis that microquasars or other phenomena could superpose spectral features on the otherwise smooth energy spectra previously measured with less statistical accuracy.

Field Season Overview:

Super-TIGER will be launched on a stratospheric balloon from Williams Field as a part of the CSBF ballooning operations (Stepp A-145). The field party of ten will begin arriving at McMurdo in late October with the expectation that the instrument will be launched in early to mid-December. Soon after launch, most of the team will return home while two or three will stay to monitor data and participate in recovery operations. Several members of the science team may camp at the recovery site for a few days to disassemble and pack the instrument for transport back to McMurdo and ultimately to the home institution.

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

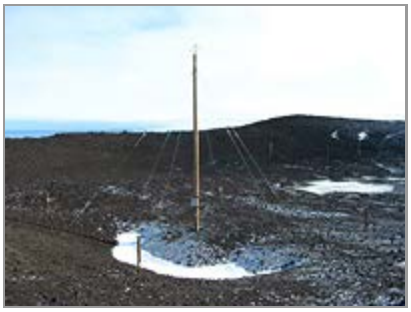
Deploying Team Members:

- Richard Bose
- Dana Braun
- Paul Dowkontt
- Thomas Hams (Co-PI)
- John Mitchell (PI)
- Ryan Murphy
- Kenichi Sakai
- Frank San Sebastian
- Makoto Sasaki
- Garry Simburger
- John Ward

Return to Index

Project Details 2012-2013

Collaborative Research: Antarctic ELF/VLF Observations Of Lightning And Lightning-Induced Electron Precipitation



Program Manager:
Dr. Vladimir Papitashvili

Event Number: A-109-M/P/S

ASC POC/Implementer:
Samina Ouda / Cara Sucher

Dr. Robert C Moore (Principal Investigator)
moore@ece.ufl.edu
http://www.vlf.ece.ufl.edu/Antarctica/

University of Florida
Gainesville, Florida

Supporting Stations: McMurdo Station, Palmer Station, South Pole Station

Research Locations: Arrival Heights / CUSP Lab / Terra Lab

Project Description:

ELF/VLF observations at McMurdo, South Pole, and Palmer Stations provide a deeper understanding of lightning and its effects on the Earth's inner radiation belt. Lightning source currents are estimated or directly measured by experimental observations of individual natural and rocket-triggered lightning flashes in North America. Together, the North American and Antarctic datasets are used to experimentally identify and analyze the components of lightning and the effects of lightning that are observed in the Antarctic, more than 10,000 kilometers distant. This project directly supports the continued operation of the ELF/VLF radiometers at all three US Antarctic research stations. At Arrival Heights, the radiometer has operated continuously for nearly 25 years, providing a unique resource for long-baseline ELF/VLF noise measurements, Schumann resonance observations, and global climate change parameterization via global lightning detection. The recently-upgraded data acquisition system continuously records ELF and the VLF data streams and provides real-time data processing and access via the Internet. Researchers in north-central Florida use the data for coordinated lightning-related experiments.

Field Season Overview:

This year, two participants will deploy to McMurdo and South Pole Stations

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

and spend about a week at each. One participant will deploy to Palmer Station. Team members perform annual maintenance and calibration prepare the systems for winter operation. The instruments record data all year and support is provided by contract research associates (RAs).

Deploying Team Members:

- Michael Mitchell
- Robert Moore (PI)

Return to Index

Project Details 2012-2013

The Polar Geospatial Information Center: Joint Support

Program Manager:
Dr. Alexandra Isern

Event Number: T-434-M
NSF/PLR 1043681

ASC POC/Implementer:
John Rand / Cara Sucher

Mr. Paul Morin (Principal Investigator)
lpaul@umn.edu
http://www.pgc.umn.edu

University of Minnesota
Geology & Geophysics
St. Paul, Minnesota

Supporting Stations: McMurdo Station
Research Locations: Ice roads, town roads, Dry Valley boundaries

Project Description:

The Polar Geospatial Center (PGC) was founded in 2007 as the Antarctic Geospatial Information Center (AGIC, funded by NSF) and has since expanded to include both polar regions. PGC provides geospatial support in the form of mapping, data delivery and GIS analysis to science and logistics communities of the NSF's arctic and antarctic research programs. Deploying PGC technicians collect ground-control points to calibrate imagery, gather satellite and aerial imagery from a variety of national and international sources and provide results to science-project grantees in geographic information systems (GIS) data formats, maps and paper documents.

Field Season Overview:

This year a total of six participants will deploy with three on station at a time. Early-season fieldwork entails the use of snowmobiles to travel along the sea ice roads to gather Google StreetView data and control points. Mid-season, the field team will make helicopter-supported day-trips to locations north and south of the Dry Valleys, and on Ross Island where ground control is lacking. Areas of Google StreetView collection includes McMurdo Station roads, the road to Scott Base, Ross Island recreation trails, sea-ice roads to/from Cape Evans, Cape Royds, Turtle Rock, and ice roads to the airfields. Additional sites may be added if time allows. Each route will be gathered on foot or on snowmobile, depending on the surface.

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Deploying Team Members:

- Bradley Herried
- Cole Kelleher
- Michelle LaRue
- Paul Morin (PI)
- Claire Porter

Return to Index

Project Details 2012-2013

Collaborative Research: Multispecies, Multi-Scale Investigations Of Long-Term Changes In Penguin And Seabird Populations On The Antarctic Peninsula

Program Manager:
Dr. Diana Nemergut

Event Number: B-044-E

ASC POC/Implementer:
Addie Coyac / Cara Ferrier

Mr. Ron Naveen (Principal Investigator)
oceanites.mail@verizon.net
http://www.oceanites.org

Oceanites, Inc.
Chevy Chase, Maryland

Supporting Stations: Special Project
Research Locations: Antarctic Peninsula

Project Description:

This is the final year of a five-year award to characterize decadal scale changes in penguin and seabird populations on the Antarctic Peninsula. Discerning how Antarctic species are changing in abundance and relative abundance, and more importantly, identifying the factors driving these long-term changes, are key steps toward improved understanding of the Antarctic ecosystem. This understanding is essential for effective stewardship of Antarctica's unique resources. The project entails two interconnected research activities: (1) Continued long-term monitoring and censusing of penguin and seabird populations including access to and landings at census sites, and (2) Synthesis and quantitative analyses of datasets detailing long-term changes in five penguin and seabird species from diverse sites throughout the Antarctic Peninsula. When complete, the penguin/seabird database will incorporate data from a variety of sources including ASI (Antarctic Site Inventory), CCAMLR (Commission for the Conservation of Antarctic Marine Living Resources), US AMLR (US Antarctic Marine Living Resources), Palmer LTER (Long Term Ecological Research), British and Argentine researchers, historic census data compiled by SCAR (Scientific Committee on Antarctic Research, and, when possible, additional privately held datasets.

Field Season Overview:

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

As in the past, this year's monitoring work and data collection will involve collaborations with a variety of logistics providers and tour operators. More than 142 census locations in the Antarctic Peninsula have been visited. This field season, researchers will focus on censusing extant and emerging gentoo penguin colonies south of Lemaire Channel, and on filling the current "data gap" in the Weddell Sea. The eight project team members will travel on tour ships in the Antarctic Peninsula.

Deploying Team Members:

- Rebecka Brasso
- Paula Casanovas-Garcia
- Rosemary Dagit
- Steve Forrest
- Elise Larsen
- Michelle LaRue
- Heather Lynch (Co-PI)
- Philip McDowall
- Aileen Miller
- Thomas Mueller
- Ron Naveen (PI)
- Melissa Rider

Return to Index

Project Details 2012-2013

UNAVCO GPS Survey Support

Program Manager:
Dr. Alexandra Isern

Event Number: T-295-M
NSF/EAR Award 1261833

ASC POC/Implementer:
Leslie Blank / Cara Sucher

Mr. Joseph R Pettit (Principal Investigator)
pettit@unavco.org
http://facility.unavco.org/project_support/polar/

UNAVCO
Boulder, Colorado

Supporting Stations: McMurdo Station
Research Locations: Crary Lab and field sites

Project Description:

UNAVCO provides technical support and equipment for precision geodetic observations using GPS and terrestrial LiDAR technologies. Survey grade GPS receivers, terrestrial laser scanners and supporting power and communications systems for both high-precision campaign surveying and continuous data collection are available to project researchers. Infrastructure for this support includes a Real Time Kinematic (RTK) differential GPS broadcasting station covering McMurdo Sound, a repeater on Mt Erebus for GPS data retrieval from the Transantarctic Mountains and an Iridium satellite communications hub in Colorado. Technical support is provided for the Palmer Station GPS surveying system. Operation and maintenance is provided as needed for the NASA IGS stations MCM4 and PALM, the POLENET (ANET) remote GPS stations and GPS reference stations at WAIS Divide and South Pole Station.

Field Season Overview:

This field season, two to four UNAVCO staffers will be based at McMurdo Station throughout the austral summer. They provide technical and field engineering support, and manage the UNAVCO equipment pool. Field team members will occasionally travel to field locations as project support requirements dictate. Detailed logistical support is arranged directly between UNAVCO and the science project team

Deploying Team Members:

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

- Brendan Hodge
- Thomas Nylen
- Marianne Okal
- Joseph Pettit (PI)

Return to Index

Project Details 2012-2013

Integrative Study Of Marine Ice Sheet Stability And Subglacial Life Habitats - Robotic Access To Grounding-Zones For Exploration And Science (RAGES)

Program Manager:
Dr. Lisa Clough

Event Number: C-522-M
NSF/PLR Award 0839107

ASC POC/Implementer:
John Rand / Brian Johnson

Dr. Ross Powell (Principal Investigator)
rpowell@niu.edu
http://www.wissard.org

Northern Illinois University
Department of Geology & Envir. Geosciences
DeKalb, Illinois

Supporting Stations: McMurdo Station
Research Locations: Sublacial Lake Whillans

Project Description:

The WISSARD project is composed of three interrelated sets of grants: LISSARD (Tulaczyk C-521), RAGES (Powell C-522) and GBASE (Priscu C-523). These projects are connected scientifically through common interest in coupled fluxes of ice, nutrients and water, subglacial sediments and by the common need to characterize and quantify physical, chemical, and biological processes operating subglacially. The research will focus on the lower portion of Whillans Ice Stream, where two hydrologically connected subglacial environments that lie within close geographical proximity can be accessed: Subglacial Lake Whillans and wet subglacial sediments including the grounding-zone wedge. The RAGES component will investigate the sedimentary record for evidence of past changes in the ice sheet, subglacial environment and ocean influences.

Field Season Overview:

This year the WISSARD field season consists of a build phase from Winfly through mid-December, a test phase at the old ANDRILL MIS site (mid-December), a traverse phase through early January, a field phase at Whillans Ice Plain and SLW-Deep (Subglacial Lake Whillans) through early February, and a return traverse through end of February.

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Seven RAGES participants will deploy in mid-October to prepare equipment and instruments for testing at the ANDRILL-MIS site near McMurdo. The team will redeploy during the traverse and initial camp setup at the Subglacial Lake Whillans field site, then return to McMurdo and deploy to the field by fixed wing during drilling and sampling in January.

Deploying Team Members:

- Timothy Hodson
- Michael LeBaron
- David Monk
- Ross Powell (PI)
- Reed Scherer (Co-PI)
- Betty Trummel

Return to Index

Project Details 2012-2013

GeomicroBiology Of Antarctic Subglacial Environments (GBASE) Beneath The Mercer And Whillans Ice Streams

Program Manager:
Dr. Lisa Clough

Event Number: C-523-M
NSF/PLR Award 0838933

ASC POC/Implementer:
John Rand / Brian Johnson

Dr. John Priscu (Principal Investigator)
jpriscu@montana.edu
http://www.wissard.org

Montana State University Bozeman
Land Resources and Environmental Sciences
Bozeman, Montana

Supporting Stations: McMurdo Station
Research Locations: Sublacial Lake Whillans

Project Description:

The WISSARD project is composed of three interrelated sets of grants: LISSARD (Tulaczyk C-521), RAGES (Powell C-522) and GBASE (Priscu C-523). These projects are connected scientifically through common interest in coupled fluxes of ice, nutrients and water, subglacial sediments and by the common need to characterize and quantify physical, chemical and biological processes operating subglacially. The research will focus on the lower portion of Whillans Ice Stream, where two hydrologically connected subglacial environments that lie within close geographical proximity can be accessed: Subglacial Lake Whillans and wet subglacial sediments including the grounding-zone wedge. The GBASE component will address metabolic and phylogenetic diversity and associated biogeochemical transformations in subglacial lake and grounding zone environments.

Field Season Overview:

This year the WISSARD field season consists of a build phase from Winfly through mid-December, a test phase at the old ANDRILL MIS site (mid-December), a traverse phase through early January, a field phase at Whillans Ice Plain and SLW-Deep (Subglacial Lake Whillans) through early February, and a return traverse through end of February.

Twelve GBASE participants will deploy in mid-November and make day trips

Project Indexes
Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites
Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season
Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

to the ADNRILL McMurdo Ice Shelf (MIS) to conduct drill tests through December. In early January the drill and labs will be traversed to Subglacial Lake Whillans (SLW). Fixed-wing aircraft will fly personnel and camp gear to the base camp at SLW. Moving samples and personnel between locations will require an estimated three fixed wing flights per week between SLW and McMurdo. Crary lab support will be required throughout the season until mid-February.

Deploying Team Members:

- Amanda Achberger
- William Adkins
- Brent Christner (Co-PI)
- Robert Edwards
- Susan Kelly
- Alexander Michaud
- Jill Mikucki (Co-PI)
- Andrew Mitchell (Co-PI)
- John Priscu (PI)
- John Priscu (PI)
- Mark Skidmore (Co-PI)
- Trista Vick

Return to Index

Project Details 2012-2013

McMurdo LTER - Lakes: Increased Connectivity In A Polar Desert Resulting From Climate Warming: McMurdo Dry Valley LTER Program

Program Manager:
Dr. Lisa Clough

Event Number: B-505-M
NSF/PLR Award 1115245

ASC POC/Implementer:
Elizabeth Watson / Cara Sucher

Dr. John Priscu (Principal Investigator)
jpriscu@montana.edu
http://www.mcmlter.org/index.html

Montana State University Bozeman
Land Resources and Environmental Sciences
Bozeman, Montana

Supporting Stations: McMurdo Station
Research Locations: Dry Valleys

Project Description:

In 1980, the National Science Foundation (NSF) funded the US Long Term Ecological Research (LTER) Network, a collaborative effort involving more than 1,800 scientists and students. The McMurdo LTER is one of 26 sites that investigates ecological processes over long temporal and broad spatial scales. The McMurdo LTER program is an inter-disciplinary and multi-disciplinary study of the aquatic and terrestrial ecosystems in the ice-free McMurdo Dry Valleys. This six-year award cycle comprises seven collaborative projects: Andrew Fountain B-504, John Priscu B-505, Diane McKnight B-506, Diana Wall B-507, Jeb Barrett, B-508, Berry Lyons B-509, and Peter Doran B-511. This project is the “Lakes 1” component of the McMurdo LTER. Researchers will continue their long-term measurements of biological, chemical, and physical limnological properties of dry valley lakes and lake ice, with special emphasis on LTER core research areas.

Field Season Overview:

Five participants will make routine lake measurements, peridocally occupying field camps at Lakes Bonney, Hoare and Fryxell from early November to early January. Sediment traps will be retrieved and re-deployed in East and West Bonney between mid-November and mid-December. They will camp for at least five nights at Lake Miers to measure biological, chemical, and

Project Indexes
Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites
Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season
Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

physical limnological properties. Team members will visit the ice edge or an ice hole in McMurdo Sound to calibrate the Seabird CTD (conductivity/temperature/depth) instrument. Other work sites may include, depending on logistics and weather, Blood Falls, the Canada Glacier, and Don Juan Pond.

Deploying Team Members:

- Amy Chiuchiolo (Team Leader)
- Hans-Peter Grossart
- Katherina Hell
- Miye Kwon

Return to Index

Project Details 2012-2013

Collaborative Research: BICEP2 And SPUD - A Search For Inflation With Degree-Scale Polarimetry From The South Pole

The five receivers of the SPUD array began deep observations of CMB polarization at the beginning of the 2012 winter. Photo Credit: Robert Schwartz.

Program Manager:
Dr. Vladimir Papitashvili

Event Number: A-149-S

ASC POC/Implementer:
Elizabeth Watson / Paul Sullivan

Dr. Clement Pryke (Principal Investigator)
pryke@physics.umn.edu
http://www.astro.caltech.edu/~lgg/keck/keck_front

University of Chicago
Astronomy & Astrophysics
Chicago, Illinois

Supporting Stations: South Pole Station
Research Locations: MAPO (Martin A. Pomerantz Observatory)

Project Description:

The Cosmic Gravitational-wave Background (CGB) imprints a signature in the polarization of the Cosmic Microwave Background (CMB). Detecting that signature is arguably the most important goal in cosmology today. BICEP is the first CMB polarimeter specifically designed to search for the signature of the CGB. Since 2006, BICEP has mapped about 2% of the sky that is uniquely free of galactic confusion. SPUD (Pryke A-149-S, aka "The Keck Array") is an array of receivers similar to BICEP2 and together they provide a further increase in mapping speed and the possibility of multiple frequencies. These receivers are more compact, use pulse tube cryogenic refrigerators rather than liquid helium, and share the former DASI mount near MAPO. This work comprises two projects: Clem Pryke's SPUD/Keck Array component (A-149), and John Kovac's BICEP2 component (A-039).

Field Season Overview:

SPUD was installed in the 2010-11 season comprising three preliminary

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

receivers operated at 150GHz through winter 2011. In 2011-12 the receivers were reconfigured and two more were added (also at 150GHz). This array of five is currently observing. This season 14 participants will perform season-ending calibrations using the far field flat mirror and several calibration sources mounted on the DSL mast. At the end of November the existing receivers will be taken down for service and upgrade. During December the receivers will be over-hauled. The new 100GHz receiver, focal planes and component detector tiles will be assembled and tested. One of the existing ones will be reconfigured with all new optics for operation at 100GHz. The other three existing receivers will have their focal planes removed and replacements for some of their detector tiles will be installed in the "tent" cleanroom in DSL. As each receiver's re-work is completed it will be reassembled, cooled and subjected to the usual battery of lab tests including optical efficiency and near field beam mapping. Once proven it will be re-installed on the telescope mount.

Deploying Team Members:

- Stefan Fliescher
- John Kovac (Co-PI)
- Martin Lueker
- Walter Ogburn
- Clement Pryke (PI)
- Robert Schwarz
- Chris Sheehy
- Zachary Staniszewski
- Sarah Stokes
- Grant Teply
- James Tolan
- Anthony Turner
- Abigail Vieregg

Return to Index

Project Details 2012-2013

WISSARD Borehole Drill Contractor

Program Manager:
Dr. Lisa Clough

Event Number: C-524-M
Subaward to NSF/PLR Awards 0839142, 0839107, 08389

ASC POC/Implementer:
John Rand / Brian Johnson

Dr. Frank Rack (Principal Investigator)
frack2@unl.edu
http://www.wissard.org

University of Nebraska Lincoln
Department of Geosciences
Lincoln, Nebraska

Supporting Stations: McMurdo Station
Research Locations: Sublacial Lake Whillans

Project Description:

The aim of the Whillans Ice Stream Subglacial Access Research Drilling (WISSARD) project is to drill into the hydrological system beneath the Whillans Ice Stream at three different locales: Into subglacial Lake Whillans at the top of the system; into the subglacial river/stream between the lake and the grounding line; and into the ocean beneath where the Whillans Ice Stream flows into the Ross Ice Shelf. This campaign will require three field seasons: During the first month of the 2012-13 field season, the drill system was tested on the McMurdo Ice Shelf. Later that season, the system was traversed to the top of the Whillans Ice Stream to begin penetration into subglacial Lake Whillans. The drill system was left on site and the rest of the project will be carried out over the next two field seasons.

Field Season Overview:

The 2012-13 season will begin with the assembly of the Hot Water Drill (HWD) system near McMurdo, after which it will be towed to a test site near the old ANDRILL McMurdo Ice Shelf (MIS) site. At least one hole will be melted through the ice here, with a second at least started. The main purpose of this phase of the season is to test setup/takedown/integration/operation of all of the equipment associated with WISSARD operations: The HWD, the science sleds and labs, and generators.

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Once there is a solid grasp on the operation of the system and associated procedures, both on the HWD side and the science side of the hole, the USAP support contractor will traverse everything to either the Whillans Ice Stream Grounding Zone (GZ) or to a site atop Subglacial Lake Whillans (SLW). At this location at least one hole will be drilled through the ice to the subglacial environment and science operations will occur as time allows. At the end of the season, WISSARD equipment that can overwinter will be left at this site on berms and the rest will be traversed back to McMurdo.

Deploying Team Members:

- Daren Blythe
- Chad Carpenter
- Dennis Duling (Team Leader)
- Dar Gibson
- Robert Powell
- Frank Rack (PI)
- Graham Roberts

Return to Index

Project Details 2012-2013

The Demographic Consequences Of Environmental Variability And Individual Heterogeneity In Life-History Tactics Of A Long-Lived Antarctic Marine Predator

At Big Razorback, a mother and pup Weddell seal exit a tide crack using an access hole that has been enlarged by the mother. Photo Credit: Jay Rotella.

Program Manager:
Dr. Diana Nemergut

Event Number: B-009-M
NSF/PLR Award 1141326

ASC POC/Implementer:
Addie Coyac / Cara Sucher

Dr. Jay Rotella (Principal Investigator)
rotella@montana.edu
http://www.montana.edu/rgarrott/antarctica/index.htm

Montana State University Bozeman
Ecology
Bozeman, Montana

Supporting Stations: McMurdo Station
Research Locations: Big Razorback Camp / Crary Lab

Project Description:

Since 1968 this group of researchers has studied a breeding population of Weddell seals (a prominent Antarctic apex predator associated with fast ice) in Erebus Bay. Using data synthesis and modeling techniques researchers can evaluate a variety of hypotheses regarding effects of environmental variation on life-history evolution and population dynamics. Researchers are also interested in the influence of physical drivers on ecosystem dynamics from the bottom-up, so their field studies include collecting data on seal body mass – a surrogate for annual variation in marine food resources. The study's broad objective is to evaluate how temporal variation in the marine environment affects a long-lived mammal's population dynamics.

Field Season Overview:

Eight participants will deploy to McMurdo and then to their field camp at Big Razorback Island. All pups born within Erebus Bay will be marked during the early field season (October-November) with a smaller effort to mark adults that have not been marked previously. After pupping is finished, the team will conduct population-wide surveys of marked and unmarked seals in Erebus

Project Indexes
Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites
Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season
Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Bay. A sample of adults and pups will be physically weighed, tissue sampled, and 40-day temperature loggers will be deployed on a small number of pups. These data will be correlated with a variety of maternal traits and environmental metrics. The field team will use helicopter support for population counts and reconnaissance flights over the study area and to look for tagged seals outside our study area.

Deploying Team Members:

- Thierry Chambert (Team Leader)
- Jesse DeVoe
- Jessica Farrer
- Robert Garrott (Co-PI)
- Eric Johnston
- Jason Jones
- Mary Lynn Price
- Darren Roberts
- Jay Rotella (PI)

Return to Index

Project Details 2012-2013

Collaborative Research In IPY: Abrupt Environmental Change In The Larsen Ice Shelf System, A Multi-Disciplinary Approach -- Cryosphere And Oceans (LARISSA)

Program Manager:
Dr. Sonia Esperanca

Event Number: C-514-E

ASC POC/Implementer:
Addie Coyac / Robert Kluckhohn

Dr. Theodore Scambos (Principal Investigator)
teds@nsidc.org
http://iceshelf.wordpress.com/

University of Colorado Boulder
National Snow & Ice Data Center
Boulder, Colorado

Supporting Stations: Special Project
Research Locations: Scar Inlet, Cape Disappointment, Flask Glacier, Leppard Glacier, Cape Framnes

Project Description:

The LARsen Ice Shelf System, Antarctica (LARISSA) project will bring an international, interdisciplinary team together to address a significant regional problem with global change implications, the abrupt environmental change in Antarctica's Larsen Ice Shelf System. The goals of the Cryosphere and Oceans project under the LARISSA multi-disciplinary effort are: 1) the understanding of glacier response after ice shelf loss; 2) ice-ocean interaction in a warming climate system; and 3) long-term climate history from the ice core record in the northern Peninsula region. The study region, the Larsen B Ice Shelf embayment, has seen dramatic changes in the past decade, including the loss of much of the ice shelf in early 2002. Since then, glaciers in the area of shelf-ice loss have accelerated significantly, and lost part of their mass to the ocean. However, a section of the ice shelf remains in the south; and glaciers in this area have shown almost no changes as yet. Researchers on the field camp segment of the LARISSA project will conduct an ice-penetrating radar and GPS survey of a potential deep ice core site on the Antarctic Peninsula in order to measure ice thickness, topography, and accumulation variations across a ~8 km x 8 km site. The data acquired will provide information to the ice core researchers on the best sites to drill for

Project Indexes
Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites
Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season
Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

high-quality ice core.

Field Season Overview:

Researchers will travel to several sites in the Western Antarctic Peninsula and will be transported from the research vessel to field-sampling sites by Zodiac inflatable boats.

Deploying Team Members:

- Terence Haran

Return to Index

Project Details 2012-2013

Collaborative Research: Replicate Coring At WAIS Divide To Obtain Additional Samples At Events Of High Scientific Interest

Program Manager:
Dr. Julie Palais

Event Number: I-476-M

ASC POC/Implementer:
Deborah Roth / Jessica Jenkins

Dr. Jeffrey Severinghaus (Principal Investigator)
jseveringhaus@ucsd.edu
http://waisdivide.unh.edu/

Scripps Institution of Oceanography
Geosciences Research Division
La Jolla, California

Supporting Stations: McMurdo Station
Research Locations: WAIS Divide

Project Description:

WAIS Divide is a collaboration of about 40 separate but synergistic projects funded by NSF to collect deep ice cores from the West Antarctic Ice Sheet (WAIS). Work began with construction of a field camp in 2005-06 and the first cores were recovered in 2006-07. On December 31, 2011 drillers reached the final depth goal of 3,405 meters, and recovered the longest U.S. ice core to date from the polar regions. Other deploying projects this year are the drilling contractor, IDDO T-350, and the Science Coordination Office (SCO, Kendrick Taylor) I-477. This associated project will acquire second and third ice cores from the borehole wall in order to replicate the main WAIS Divide ice core in areas of key scientific interest such as abrupt climate changes and volcanic sulfate horizons. These replicate cores will permit measurements that are currently impossible because of limited sample volume, and allow for validation of key scientific findings. Field activity will take place at the WAIS Divide ice core site using the established camp and support infrastructure, including a version of the DISC (Deep Ice Sheet Coring) drill with modifications for replicate coring.

Field Season Overview:

The 2011-12 field season was split between several different activities including replicate coring, borehole logging and deepening of the main

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

borehole. This field season will be dedicated to replicate coring; no borehole logging or main borehole deepening will occur. Team members will deploy to McMurdo and then to the WAIS Divide camp. About 250 meters of replicate core is expected to be recovered and returned to the National Ice Core Lab.

Deploying Team Members:

- Ross Beaudette
- Jihong Cole-Dai (Co-PI)

Return to Index

Project Details 2012-2013

The Drake Passage High-Density XBT/XCTD Program

Program Manager:
Dr. Peter Milne

Event Number: O-260-L
NSF/PLR Award 0943818

ASC POC/Implementer:
Addie Coyac / Robert Kluckhohn

Dr. Janet Sprintall (Principal Investigator)
jsprintall@ucsd.edu
http://www-hrx.ucsd.edu

Scripps Institution of Oceanography
Physical Oceanography Research Division
La Jolla, California

Supporting Stations: ARSV Laurence M. Gould
Research Locations: Drake Passage

Project Description:

The objective of the XBT/XCTD program is to measure the seasonal to interannual variability of upper ocean temperature and geostrophic transport through Drake Passage. Closely spaced XBT (temperature) and XCTD (salinity) measurements are collected underway on six to eight L.M. Gould crossings per year. The project has been ongoing since 1996. With the multi-year time series we have observed substantial variability in circulation, transport and water properties on time scales from seasonal to interannual, and spatial scales from mesoscale eddies to the Antarctic Circumpolar Current cores.

Field Season Overview:

On selected Drake transit cruises of the LMG, staff techncians deploy XBT and XCTD sensors and collect the data they send back to the vessel during their descent. Approximately 70 XBTs (eXpendable BathyThermographs) are dropped by Scripps' automatic launcher at pre-specified locations identified by shipboard GPS. Approximately 12 XCTD (eXpendable Conductivity Temperature Depth) probes are dropped at specified locations during the same transects. Staff technicians load the launcher and collect salinity samples which are used to calibrate the XCTD and underway thermosalinograph (TSG) data. One project participant will deploy to a port call to install new software and upgrade existing instrumentation.

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Return to Index

Project Details 2012-2013

Collaborative Research: Microbially Mediated Alteration Of Volcanic Glass Using McMurdo Extreme Environments As Natural Laboratories

Program Manager:
Dr. Alexandra Isern

Event Number: G-439-M

ASC POC/Implementer:
John Rand / Jessica Jenkins

Dr. Hubert Staudigel (Principal Investigator)
hstaudigel@ucsd.edu
http://earthref.org/ERESE/projects/GOLF439/2010/

Scripps Institution of Oceanography
Institute for Geophysics and Planetary Physics
La Jolla, California

Supporting Stations: McMurdo Station
Research Locations: Cape Evans, Mount Erebus, Pyramid Trough, Taylor Valley, Tramway Ridge, Turtle Rock

Project Description:

Antarctica is a very harsh continent with very little life. Food webs have to be very “creative” to adjust to conditions that have been compared to life on other planets or during the early Earth. This project will use these special conditions to explore which microbes are the most successful at using nutrients and energy from volcanic rocks. The goal is to improve understanding of microbes at the bottom of the food chain: How can microbes make organic carbon by using inorganic components? Which microbes are the main players in utilizing chemical energy and nutrients from rocks and soils that are very poor in organic matter? Experiments will focus on the Extreme Environments of the McMurdo area around Ross Island, Antarctica. These will include some (ancient) lava flows and lakes in the Dry Valleys, the Royal Society Range, and on Mount Erebus.

Field Season Overview:

Participants will deploy early in the season and start by recovering experiments and environmental samples deployed in previous years. Then, when weather allows, they will travel to Mount Erebus where they will share logistics with Phil Kyle’s project (G-081) to enter the caves and establish key sampling sites. After the sites are established, each group will conduct their

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

own sampling activities. From there, this group will move on to Lake Fryxell to recover moorings and collect water samples using CTD (conductivity, temperature, depth) sensors and Niskin bottles. When rivers start flowing they will sample their “reference” creek in upper Taylor Valley (near Sollas) and Walcott. Depending on the progress of melting the field team may stop and sample from either one of the rivers on the flights back to McMurdo. If rivers don't flow at that time, the field team will make a separate trip, likely feasible in January. If logistics allow, they will spend four to eight hours collecting wet basalt ground samples on Black Island by "hitching a ride" with supply runs to the repeater station. In addition to these field-based activities, the group will process recovered samples in Crary Lab.

Deploying Team Members:

- Laurie Connell (Co-PI)
- Anthony Rigoni
- Hubert Staudigel (PI)
- Bradley Tebo (Co-PI)

Return to Index

Project Details 2012-2013

Palmer Long Term Ecological Research (LTER): Looking Back In Time Through Marine Ecosystem Space, Zooplankton Component

Program Manager:
Dr. Lisa Clough

Event Number: B-020-L/P
NSF/PLR Award 0823101

ASC POC/Implementer:
Samina Ouda / Philip Spindler

Dr. Deborah Steinberg (Principal Investigator)
debbies@vims.edu
http://pal.lternet.edu/

Virginia Institute of Marine Sciences
Department of Biological Sciences
Gloucester Point, Virginia

Supporting Stations: ARSV Laurence M. Gould, Palmer Station
Research Locations: LTER Study Site / Palmer Station

Project Description:

Zooplankton and micro-nekton provides the main trophic link between primary producers and apex predators in the Southern Ocean. Researchers will focus on: (1) Trophic cascading and food selectivity experiments; (2) Determining the target strength and backscattering cross section of krill in response to the Acoustic Doppler Current Profiler (ADCP) that will be used on the bio-acoustic Slocum Webb Glider; (3) Characterizing the microzooplankton community present in local waters to better understand their grazing impact on primary producers; and (4) Characterizing the quality and quantity of total lipids and fatty acids in zooplankton in the region.

Field Season Overview:

At Palmer Station, researchers will conduct bioacoustic surveys using the Biosonics DT-X echo sounder at least three times per week. Project participants will also sail onboard the annual 28-day LTER cruise onboard the Laurence M. Gould (LMG) from January 1 to February 15th. Vessel-based activities include three net tows per station: One tow with a one-meter square net to a depth of 300 meters and one or two tows with a two-meter net to a depth of 120 meters. The 1-meter MOCNESS will be used to sample discrete depth horizons at the process study stations, and possibly a few of the regular grid stations. The Biosonics acoustic towfish will be deployed at

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

the Process Study Stations to detect krill aggregations. Live zooplankton will be maintained and experimental vessels kept at cool temperatures using constantly flowing seawater into the aquaria. Microzooplankton grazing ("dilution") experiments will be conducted in on-deck incubators.

Deploying Team Members:

- Kim Bernard
- Brandon Conroy
- Joseph Cope
- Miram Gleiber
- Lori Price
- Kate Ruck
- Deborah Steinberg (PI)

Return to Index

Project Details 2012-2013

NASA Long Duration Balloon (LDB) Support Program

Program Manager:
Dr. Vladimir Papitashvili

Event Number: A-145-M
NSF/NASA Agreement

ASC POC/Implementer:
Addie Coyac / Brian Johnson

Mr. Bill Stepp (Principal Investigator)
Bill.Stepp@csbf.nasa.gov
http://www.csbf.nasa.gov

Columbia Scientific Balloon Facility
Palestine, Texas

Supporting Stations: McMurdo Station
Research Locations: LDB Facility at Williams Field

Project Description:
This austral summer, the Columbia Scientific Balloon Facility (CSBF) will launch three stratospheric balloons as part of NASA's Long Duration Balloon (LDB) program. The balloons measure 400 feet in diameter, expand to a volume of 40 million cubic feet, and ascend at a rate of about 900 feet per minute to a float altitude of 125,000 feet. The payloads are composed of scientific instruments, command and control systems, and solar and/or battery-powered units. The bulk of the data collected is stored on onboard hard drives, with a small amount sent by radio telemetry to the United States. Because of the Antarctic wind pattern that starts in early December, the balloons will circumnavigate Antarctica between 70 and 80 degrees south latitude.

Field Season Overview:
This year's science payloads are Shaul Hananay's E and B Experiment (EBEX, A-146), Mark Devlin's Balloon-borne Large Aperture Sub-millimeter Telescope (BLAST, A-147), and Walter Binns' SuperTIGER (A-142). The project teams are housed at McMurdo and commute to the Williams Field launch facility. Balloons are rigged and payloads are prepared in advance so they can launch as soon as weather and wind patterns permit. Upon termination of the flights, recovery teams use fixed-wing and/or helicopter support to retrieve the instrument and its parachute. A contract camp manager, equipment operator, cook and general assistant (GA) are assigned to the facility. Each year, the prime contractor's facility maintenance division

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

sets up and takes down the camp buildings. The operations division prepares the launch pad, maintains the roads, and services the generators.

Deploying Team Members:

- Alexander Beange
- Curtis Frazier
- Gerald Gregg
- Jack Hays
- Jim Humphrey
- Otto Masters
- Dwayne Orr
- Gerald Orr
- Jacob Richard

Return to Index

Project Details 2012-2013

Collaborative Research: Biogeochemical Controls Of The Oxygen And Carbon System In The Drake Passage

Program Manager:
Dr. Peter Milne

Event Number: O-214-L
NSF/PLR Award 0944761

ASC POC/Implementer:
Addie Coyac / Robert Kluckhohn

Dr. Colm Sweeney (Principal Investigator)
colm.sweeney@noaa.gov
http://www.ldeo.columbia.edu/CO2

National Oceanic and Atmospheric Administration
Global Monitoring Division (GMD)
Boulder, Colorado

Supporting Stations: ARSV Laurence M. Gould
Research Locations: Drake Passage

Project Description:

The Antarctic Circumpolar Current is the strongest wind-driven ocean current on the planet. Encircling the entire continent, it has a natural “chokepoint” in the form of the Drake Passage lying between South America and the Antarctic Peninsula. Since 1994, this project has collected data during all cruises of the ARSV Laurence M. Gould (LMG). The installed equipment measures the underway surface partial pressure of carbon dioxide (pCO2) and takes discrete samples of other parameters of interest to studying the carbon system such as total CO2 (TCO2), and isotopic (13C/12C and 14C/12C) ratios in surface TCO2. During the selected southbound Drake Passage transects of Janet Sprintall’s O-260, this group also obtains direct measurements from seawater samples and collects physical hydrographic data from the launched XBT and XCTD probes. The measurement set provides an opportunity to increase our understanding of the major processes that control spatial, seasonal and inter-annual variability of dissolved carbon dioxide (CO2) in the waters of the Drake Passage and biogeochemical fluxes in the Southern Ocean.

Field Season Overview:

Project participants deploy to one or two port calls per year to maintain and upgrade equipment. Onboard support staffers and technicians monitor the equipment, turn it on and off to avoid data collection in other nations’

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Exclusive Economic Zones (EEZ), and perform maintenance as needed. During Janet Sprintall's O-260 Drake Passage transects, contract technicians collect water samples for this project. At the end of each cruise the data is distributed to the project PIs and collaborators as well as the onboard science parties.

Deploying Team Members:

- Jonathan Bent
- Britton Stephens (Co-PI)
- Andrew Watt

Return to Index

Project Details 2012-2013

Installation Of A CTBT Class Infrasound Station

Program Manager:
Ms. Jessie Crain

Event Number: T-396-M
NSF/CTBT MOA

ASC POC/Implementer:
John Rand / Cara Sucher

Dr. Curt Szuberla (Principal Investigator)
cas@gi.alaska.edu
http://www.gi.alaska.edu/infrasound/

University of Alaska Fairbanks
Geophysical Institute
Fairbanks, Alaska

Supporting Stations: McMurdo Station
Research Locations: Windless Bight

Project Description:

From 1976 to 1985, the Geophysical Institute at the University of Alaska Fairbanks operated an infrasonic array at Windless Bight on the Ross Ice Shelf. The area is unique for its very low wind levels, making it an excellent site for Antarctic infrasound detection. In 2001, a modern array was installed and has operated since then. Infrasonic waves are long-wavelength, low-frequency acoustic waves that are below the frequency range of human hearing. They can be detected on the Earth's surface by an array of specialized microphones operating in the passband from 0.02 to 10 Hertz. Infrasound propagates with little attenuation over great distances from many different natural and man-made sources. Natural sources include volcano eruptions, winds over distant mountain ranges, large storms at sea, aurora, meteors, earthquakes and avalanches. Human-caused sources are large explosions. The installation at Windless Bight is part of the joint US and Comprehensive Nuclear Test Ban Treaty Organization Infrasound Array.

Field Season Overview:

Five participants will deploy and camp at Windless Bight. Support entails tracked vehicles, a small camp erected by Science Construction, fuel, and year around storage space. Over the winter, a contract Research Associate (RA) monitors and maintains the installation.

Deploying Team Members:

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

- Don Byrd
- Jay Helmericks (Team Leader)
- Brian Lawson
- Kathleen Lawson
- David Withoff

Return to Index

Project Details 2012-2013

WAIS Divide Science Coordination Office (SCO)

Program Manager:
Dr. Julie Palais

Event Number: I-477-M

ASC POC/Implementer:
Deborah Roth / Jessica Jenkins

Dr. Kendrick Taylor (Principal Investigator)
kendrick@dri.edu
http://waisdivide.unh.edu/

Desert Research Institute
Division of Hydrological Science
Reno, Nevada

Supporting Stations: McMurdo Station
Research Locations: WAIS Divide

Project Description:

WAIS Divide is a collaboration of about 40 separate but synergistic projects funded by NSF to collect deep ice cores from the West Antarctic Ice Sheet (WAIS).Work began with construction of a field camp in 2005-06 and the first cores were recovered in 2006-07. On December 31, 2011 drillers reached the final depth goal of 3,405 meters, and recovered the longest U.S. ice core to date from the polar regions.

This project represents the Science Coordination Office (SCO) for WAIS Divide, providing scientific and field oversight. An SCO representative and science technicians will deploy to the field camp. Other deploying projects this year are the drilling contractor, IDDO T-350, and Jeff Severinghaus I-476-M.

Field Season Overview:

In addition to the replicate coring of the main borehole (Severinghaus I-476), one or two ten-meter-long ice cores will be collected within five kilometers of the camp using a three-inch PICO hand auger. As time, weather and resources permit, several more five- to ten-meter-long ice cores will be collected along a transect from the WAIS Divide site to just past the ITASE-001 site at the ice flow divide, approximately 20 kilometers from camp.

Deploying Team Members:

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

- John Fegyveresi
- Emily Longano
- Bradley Markle
- Don Voigt (Team Leader)

Return to Index

Project Details 2012-2013

NASA/McMurdo Ground Station (MG1)

Program Manager:
Mr. Pat Smith

Event Number: T-927-M
NASA/NSF Agreement

ASC POC/Implementer:
John Rand / Joe Harrigan

Mr. Bruce Thoman (Principal Investigator)
bruce.e.thoman@nasa.gov
http://scp.gsfc.nasa.gov/gn/

National Aeronautics and Space Administration
Goddard Space Flight Center
Greenbelt, Maryland

Supporting Stations: McMurdo Station
Research Locations: Above McMurdo Station

Project Description:

NASA's McMurdo Ground Station (MG1) is a 10-meter antenna housed in a white radome visible on the hill above McMurdo Station. It is used primarily for data recovery from polar orbiting science satellites, both of NASA and of foreign entities (esp. where NASA has a hosted instrument on-board a foreign satellite). MG1 provides launch and early operations phase (LEOP) support for launches from Vandenberg AFB for satellite missions that require downrange telemetry support from McMurdo. MG1 also provides telemetry and command for satellite housekeeping and recovery from satellite operational emergencies. MG1 provides data recovery for the EUMETSAT MetOp polar weather satellite constellation, in collaboration with NOAA National Environmental Satellite and Data Information Service, which reduces by a factor of 2 the time latency for data ingest into U.S. and European weather forecasting models, improving forecasting accuracies.

Field Season Overview:

Each year, two NASA technicians deploy to McMurdo for the winter and additional personnel deploy for the austral summer to support special projects, launch supports and crew turnover intervals. This year the field team will begin the MG1 radome refurbishment and MTRS upgrade.

Deploying Team Members:

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

- Mark Burns
- Susan Chang
- James Hendrickson
- William Kambarn
- Nickolas Sinkola (Co-PI)
- Edward Wendell

Return to Index

Project Details 2012-2013

McMurdo LTER - Soils: Increased Connectivity In A Polar Desert Resulting From Climate Warming: McMurdo Dry Valley LTER Program

Program Manager:
Dr. Lisa Clough

Event Number: B-507-M
NSF/PLR Award 1115245

ASC POC/Implementer:
Elizabeth Watson / Cara Sucher

Dr. Diana Wall (Principal Investigator)
diana.wall@colostate.edu
http://wp.natsci.colostate.edu/walllab/

Colorado State University
Natural Resource Ecology Laboratory
Fort Collins, Colorado

Supporting Stations: McMurdo Station
Research Locations: Dry Valleys

Project Description:

In 1980, the National Science Foundation (NSF) funded the US Long Term Ecological Research (LTER) Network, a collaborative effort involving more than 1,800 scientists and students. The McMurdo LTER is one of 26 sites that investigates ecological processes over long temporal and broad spatial scales. The McMurdo LTER program is an inter-disciplinary and multi-disciplinary study of the aquatic and terrestrial ecosystems in the ice-free McMurdo Dry Valleys. This six-year award cycle comprises seven collaborative projects: Andrew Fountain B-504, John Priscu B-505, Diane McKnight B-506, Diana Wall B-507, Jeb Barrett, B-508, Berry Lyons B-509, and Peter Doran B-511. This project is the “soils” component of the McMurdo LTER. Researchers maintain (through application of water and nutrients), monitor (soil moisture and temperature) and sample (soils) in their long-term experimental plots near Lakes Fryxell, Hoare and Bonney. The project aims to determine the impacts of natural factors and those associated with potential climate change on the abundance, distribution and diversity of soil biota.

Field Season Overview:

Ten participants will make one-to-seven-day trips to the dry valleys where they monitor, maintain, and sample long-term experiments, as well as sample

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

soils to support developing work on the N and P cycles, turnover of organic matter, and moss-soil interactions in the field. Between trips to the field, team members return to Crary Lab for sample processing and initial analysis, and to perform incubation assays on selected soils.

Deploying Team Members:

- Byron Adams
- John Barrett (Team Leader)
- Kevin Geyer
- Kevin Geyer
- Martijn Vandegehuchte
- Ross Virginia (Co-PI)
- Diana Wall (PI)

Return to Index

Project Details 2012-2013

PolarTREC

Program Manager:
Mr. Peter West

Event Number: Y-606-M
NSF/PLR Award 0956825

ASC POC/Implementer:
Addie Coyac

Ms. Janet Warburton (Principal Investigator)
warburton@arcus.org
http://www.polartrec.com/

Arctic Research Consortium
Fairbanks, Alaska

Supporting Stations: McMurdo Station
Research Locations: See "Field-Season Overview"

Project Description:

PolarTREC (Teachers and Researchers Exploring and Collaborating) is a program in which K-12 teachers spend two to six weeks participating in hands-on field research experiences in the polar regions. The goal of PolarTREC is to invigorate polar science education and understanding by bringing K-12 educators and polar researchers together. By fostering the integration of research and education, PolarTREC will continue the momentum established during the International Polar Year (IPY). The program is managed by the Arctic Research Consortium of the United States (ARCUS) and is housed in Fairbanks, Alaska. ARCUS is a nonprofit member consortium of educational and scientific institutions that have a substantial commitment to polar research.

Field Season Overview:

Through a competitive application and review process teachers are selected for participation in the program. This year, four PolarTREC teachers have been paired with NSF-funded Antarctic research projects: Brian DuBay will join Samantha Hansen's field team (G-061); Jacquelyn Hams will work with Dave Marchant in Beacon Valley (G-054); Mike LeBaron will participate in the WISSARD project (Priscu C-523, Tulaczyk C-521, Powell C-522); and Liz Ratliff will deploy to the South Pole as a member of the IceCube team (A-333).

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Return to Index

Project Details 2012-2013

NOAA/AMLR Cruise

Program Manager:
Dr. Charles Amsler

Event Number: B-006-N
NOAA/NSF Agreement

ASC POC/Implementer:
Addie Coyac / Robert Kluckhohn

Dr. George Watters (Principal Investigator)
george.watters@noaa.gov
http://swfsc.noaa.gov/textblock.aspx?id=551&ParentMenuId=42

National Oceanic and Atmospheric Administration
La Jolla, California

Supporting Stations: RV/IB Nathaniel B. Palmer
Research Locations: Elephant Island

Project Description:

NOAA Fisheries' AMLR (Antarctic Marine Living Resources) Program supports the development of US policy regarding the conservation and management of the marine living resources in the Southern Ocean. For the past 25 years the AMLR field program has been conducted in the vicinity of Elephant Island, the South Shetland Islands, and the Antarctic Peninsula during the austral summer. This austral winter, researchers will conduct an 18-day shakedown cruise to test US AMLR sampling protocols and procedures during the winter and in the sea ice. Ultimately, these protocols and procedures will be adapted and applied in future winter surveys.

Field Season Overview:

Field team members will deploy onboard NPB 12-08 in August. They will conduct a bio-acoustic, oceanographic and net-based krill survey in the vicinity of the Elephant Island to map meso-scale features of water mass structure, phytoplankton biomass and productivity, zooplankton and bacterioplankton composition, and the dispersion and population demography of krill during mid-winter.

Deploying Team Members:

- Anthony Cossio
- Adrian Dahood-Fritz
-

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Kimberly Dietrich

- Michael Fink
- Michael Force
- Christopher Jones (Co-PI)
- Alison Murray
- Andrea Pesce
- Rachel Pound
- Christian Reiss (Co-PI)
- Kate Richerson
- Diego Rodriguez
- Jarrod Santora
- Claire Surrey-Marsden
- Lars Thoresen
- Jennifer Walsh
- George Watters (PI)
- Elliot Weiss

Return to Index

Project Details 2012-2013

Studies Of The Polar Ionosphere And Magnetosphere From Measurements In Antarctica

The imaging riometer at South Pole Station is a passive, phased-array system, capable of examining ionospheric electron density perturbations in fine time scale, as well as small spatial scale. Photo Credit: TJ Rosenberg.

Program Manager:
Dr. Vladimir Papitashvili

Event Number: A-111-M/S
NSF/PLR Award 1247975

ASC POC/Implementer:
Samina Ouda / Cara Sucher

Dr. Allan T Weatherwax (Principal Investigator)
aweatherwax@siena.edu
http://www.antarcticgeospace.org

Siena College
Loudonville, New York

Supporting Stations: McMurdo Station, South Pole Station
Research Locations: Arrival Heights / ARO

Project Description:

Since the advent of space flight, it has become increasingly important to understand the Earth's space environment. The Polar Regions, and especially Antarctica, play a crucial role in this research. The Antarctic is magnetically connected to vast regions of the magnetosphere and solar wind, and provides the only practical locations for Earth-based measurements at the highest magnetic latitudes. At lower magnetic latitudes, Antarctic observatories are essential for efforts to understand global processes occurring in conjugate ionospheres. This collaborative project will continue studies of the polar ionosphere and magnetosphere from South Pole and McMurdo Stations. Magnetometer observations, high frequency (HF) cosmic noise absorption measurements (riometry) and auroral luminosity measurements will form the basis of these investigations, and will include collaboration with other investigators using complementary data sets. Specifically, this project maintains and operates magnetometers at South Pole and McMurdo stations, as well as imaging and broadbeam riometers and 2-wavelength zenith photometers. Researchers also provide and

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

operate the data acquisition systems at South Pole and McMurdo for the common recording of other geophysical data and the provision of these data to all investigators.

Field Season Overview:

The magnetometer, riometer and photometer systems at both McMurdo and South Pole continuously collect data. Acquisition is provided via a common data recording system at both locations. The contract Research Associates (RAs) at each station supports the equipment year-round. This year project team members will visit McMurdo to upgrade hardware and software. At the South Pole, the Stanford VLF receiver that was previously maintained under this project is now maintained by LaBelle (A-125-S).

Deploying Team Members:

- Yusuke Ebihara
- Joseph Kujawski

Return to Index

Project Details 2012-2013

Polar Experiment Network For Geospace Upper-Atmosphere Investigations: PENGUIn - A High-Latitude Window To Geospace Dynamics

A wind and solar powered U.S. Automatic Geophysical Observatory (AGO). These remote platforms house a suite of instruments that monitor the space environment of Earth over a range of radio and optical wavelengths. Photo Credit: Andy Stillinger, NJIT.

Program Manager:
Dr. Vladimir Papitashvili

Event Number: A-112-M
NSF/PLR Award 0840158

ASC POC/Implementer:
Samina Ouda / Brian Johnson

Dr. Allan T Weatherwax (Principal Investigator)
aweatherwax@siena.edu
http://antarcticgeospace.org

Siena College
Loudonville, New York

Supporting Stations: McMurdo Station
Research Locations: AGO Sites

Project Description:

The Polar Experiment Network for Geospace Upper-atmosphere Investigations (PENGUIn) project is a multi-university collaborative effort dedicated to better understanding the dynamics of Earth's high-latitude ionosphere and magnetosphere systems, including their interaction with the high-latitude thermosphere and mesosphere. A central part of the project is to understand the coupled response of the entire upper atmosphere and magnetosphere to space weather disturbances across all spatial and temporal scales.

Field Season Overview:

Three project engineers and a PolarTREC teacher will deploy to the Automatic Geophysical Observatories (AGOs). The engineering emphasis this year is on upgrading the power and telemetry systems at all sites. The field team will be moderately heavy with cargo going into several sites, but

Project Indexes
Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites
Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season
Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

significantly lighter on pull-out. Fuel will be cached at as many of the five AGOs as is practical.

Deploying Team Members:

- David McGaw
- Bob Melville (Team Leader)
- Timothy Spuck
- Andrew Stillinger

Return to Index

Project Details 2012-2013

Collaborative Research, IPY POLENET-Antarctica: Investigating Links Between Geodynamics And Ice Sheets

Program Manager:
Dr. Alexandra Isern

Event Number: G-079-M

ASC POC/Implementer:
Leslie Blank / Elizabeth Kauffman

Dr. Terry Wilson (Principal Investigator)
twilson@mps.ohio-state.edu
http://www.polenet.org

Ohio State University
Geological Sciences and Byrd Polar
Columbus, Ohio

Supporting Stations: McMurdo Station
Research Locations: West Antarctica

Project Description:

The behavior of the polar ice sheets has immense societal impact because of its potential to affect sea level. This project observes Antarctica's glaciological and geological systems using an extensive GPS-Seismic network installed in West Antarctica. This cross-disciplinary group of researchers has almost completed installation of a backbone network of co-located, continuously-recording GPS and broadband seismic sensors with real-time data telemerty at sites across West Antarctica and the Transantarctic Mountains. Additional GPS and seismic stations have been deployed to improve station density and test key hypotheses about the history and dynamics of the West Antarctic Ice Sheet (WAIS) and the solid Earth beneath.

Field Season Overview:

This field season is the sixth year of the project. Twenty-six participants will deploy to complete the single GPS installation remaining in the broadly defined 'Pine Island Bay' region at Meyers Nunatak. Existing network sites will be visited for maintenance and to obtain seismic data that is not yet telemetered. The field team will operate from the McMurdo, South Pole, and Byrd Camp logistic hubs. McMurdo Station will support fixed-wing and helo operations. Byrd Camp will support Twin Otter and Basler operations.

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Several of the ANET/POLENET sites are best accessed from South Pole, and researchers will work with ASC contractors to devise a plan that coordinates their support with that of the AGAP project (Patrick Shore).

The priorities for site visits are: 1A) New installation, 1B) Sites that are not fully operational; Sites that have not been visited in two years; and sites where upgrades were not fully completed last season, and 2) Sites (fully functioning) in the Transantarctic Mountains, Marie Byrd Land, Patriot Hills, and Amundsen Embayment regions for minor maintenance and/or to acquire seismic data. If possible given logistics, weather, and sea ice conditions, a subset of the field team will visit the newly installed GPS station at Franklin Island which has ceased to communicate via Iridium.

Deploying Team Members:

- Dean Childs
- Audrey Huerta
- Eric Kendrick (Team Leader)
- Andrew Lloyd
- Joel Main
- Rob McBrearty
- Rob McBrearty
- Jeremy Miner
- J.R. Roberts
- Michael Roberts
- Doug Wiens (Team Leader)
- Terry Wilson (PI)

Return to Index

Project Details 2012-2013

Thermospheric Neutral Wind Observation In The Antarctica Peninsula

The sky scanner component of the Palmer Station Fabry-Perot interferometer. Photo Credit: Brian Nelson.

Dr. Qian Wu (Principal Investigator)
qwu@ucar.edu
http://fpi.hao.ucar.edu

Program Manager:
Dr. Vladimir Papitashvili

Event Number: A-132-P
NSF/PLR Award 0839119

ASC POC/Implementer:
Samina Ouda / Philip Spindler

University Corporation for Atmospheric Research, UCAR/NCAR
Boulder, Colorado

Supporting Stations: Palmer Station
Research Locations: Terra Lab

Project Description:

This Palmer Station research project is a collaboration with Australian scientists who have Fabry-Perot interferometer (FPI) instruments at the Australian Mawson and Davis Stations to jointly analyze the neutral wind and temperature data to address the following issues: (1) Thermospheric neutral wind effect on the Weddell Sea Anomaly; (2) Lower thermosphere wind effect on shuttle plume drift; (3) Non-migrating tides in the mesosphere and lower thermosphere; and (4) Geomagnetic effect on the thermospheric wind.

Field Season Overview:

This project will install and operate a new Fabry-Perot interferometer (FPI) mesospheric and thermospheric neutral wind and temperature observation site at Palmer Station. The equipment was installed in 2009-10 and two field team members will service the instrument at Palmer Station each year. The Palmer Station site is part of a larger project that includes FPI instruments at Mawson and Davis Stations operated by the Australian Antarctic program. American and Australian researchers jointly analyze the neutral wind and temperature data seeking to understand more about (1) Thermospheric neutral wind effect on the Weddell Sea Anotmaly; (2) Lower thermosphere

Project Indexes
Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites
Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season
Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

wind effect on shuttle plume drift; (3) Non-migrating tides in the mesosphere and lower thermosphere; and (4) Geomagnetic effect on the thermospheric wind.

Deploying Team Members:

- Qian Wu (PI)

Return to Index

Project Details 2012-2013

Collaborative Research: Sampling The Ocean - Sea Ice Interaction In The Pacific Center Of The Antarctic Dipole

Jim Ryder ensures "hard hat" floats go overboard without tangling. Photo Credit: Chris Measures.

Program Manager:
Dr. Peter Milne

Event Number: O-261-N

ASC POC/Implementer:
Addie Coyac / Robert Kluckhohn

Dr. Xiaojun Yuan (Principal Investigator)
xyuan@ldeo.columbia.edu
http://www.ldeo.columbia.edu/~xyuan/ADPmooring/index.html

Columbia University
Lamont Doherty Earth Observatory
New York, New York

Supporting Stations: RV/IB Nathaniel B. Palmer
Research Locations: Amundsen Sea

Project Description:

The Antarctic Dipole (ADP) presents the strongest tropical-polar teleconnection climate signal in the Southern Ocean, with poles centered within the Ross Gyre of the Pacific sector and the central Weddell Gyre of the Atlantic sector. The ADP is a standing mode pattern characterized by out-of-phase relationships in the surface air temperature, sea surface temperature, and sea ice fields. While the atmospheric and sea surface signatures of the ADP have received much recent attention, little is known about the role of the upper ocean in maintaining and reinforcing the ADP climate anomalies in the Southern Ocean. This project installed a deep sea mooring that reaches to the mixed layer in winter. The mooring directly monitors the upper ocean in the regional centers of the strongest climate signal in the Southern Ocean, providing an ability to investigate the role of the ocean in the highly coupled air-sea-ice system that maintains this signal. The high vertical resolution mooring data will provide unique measurements of the upper ocean temperature and salinity characteristics in the Pacific ADP

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

center.

Field Season Overview:

The mooring was deployed last year from NBP12-02 (April 2011) at a depth of about 4600 meters. Full depth CTD stations were carried out at the mooring site and 0.5 degree north, south, east and west of the mooring site. Twenty-four XBTs and 12 XCTD were evenly deployed between the CTD stations from 150W to 130W and between CTD stations north and south of the mooring. Four ice-avoidance ARGO floats were deployed west of the mooring site in February 2010. This year three participants will deploy to recover the mooring during NBP 13-02.

Deploying Team Members:

- Bruce Huber
- Janet Sprintall (Co-PI)
- Xiaojun Yuan (PI)

Return to Index

Science Program Indexes 2012-2013

USAP Program Index:

Ocean and Atmospheric Sciences

Return to Index

Principal Investigator	Event No.	Project Title
Cassano, John	O-240-M	Collaborative Research: Ocean-ice-atmosphere interactions in the Terra Nova Bay polynya
Cassar, Nicolas	O-405-L	Physiological and ecosystem structure forcings on carbon fluxes in the Southern Ocean mixed layer
Chereskin, Teresa	O-317-L/N	Collaborative research: Southern Ocean current observations from the U.S. Antarctic research vessels
Corbett, David	O-176-L/P	Submarine groundwater and freshwater inputs along the Western Antarctic Peninsula
Emerson, Steven	O-254-L	Noble gases in the Drake Passage aboard the ARSV Laurence M. Gould
Firing, Eric	O-317-L/N	Collaborative research: Southern Ocean current observations from the U.S. Antarctic research vessels
Hansell, Dennis	O-309-N	Collaborative Research: TRacing the fate of Algal Carbon Export in the Ross Sea (TRACERS)
Helmig, Detlev	O-233-M	Reactive gas chemistry in the Dome C snowpack and its influence on surface-layer chemistry and ice-core records
Holland, David	O-286-M	Collaborative Research: Application of distributed temperature sensors (DTS) for Antarctic ice shelves and cavities
Kalnajs, Lars	O-324-M	Augmenting the Ross Island-area automatic weather station network to develop a tropospheric ozone climatology
Lazzara, Matt	O-283-M	Antarctic Automatic Weather Station (AWS) program

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Ledwell, James	O-124-L	Studies of turbulence and mixing in the Antarctic Circumpolar Current, a continuation of DIMES
Leonard, Katherine	O-242-E	Role of snow distribution processes in Antarctic sea ice mass balance
Lubin, Dan	O-314-M	Antarctic Cloud Physics: Fundamental Observations from Ross Island
Miller, Scott	O-278-N	Air-sea fluxes of momentum, heat, and carbon dioxide at high wind speeds in the Southern Ocean
Obbard, Rachel	O-263-M	Bromide in snow in the sea ice zone
Sprintall, Janet	O-260-L	The Drake Passage high-density XBT/XCTD program
Sweeney, Colm	O-214-L	Collaborative research: Biogeochemical controls of the oxygen and carbon system in the Drake Passage
Warren, Stephen	O-201-E	Spectral and broadband albedo of Antarctic sea-ice types
Yuan, Xiaojun	O-261-N	Collaborative Research: Sampling the ocean - sea ice interaction in the Pacific center of the Antarctic Dipole

Return to Index

Science Program Indexes 2012-2013

USAP Program Index:

Technical Event

Return to Index

Principal Investigator	Event No.	Project Title
Bentley, Charles	T-350-M	Ice Coring and Drilling Services (ICDS) support for WAIS Divide
Carpenter, Paul	T-299-M	IRIS/PASSCAL seismic support
Comberiate, Mike	T-966-M	TDRSS and NAILS
Crocker, Brian	T-500-M	T-500-O
Hosticka, Bouvard	T-998-P	Operation and maintenance of a CTBT radionuclide monitoring station at Palmer Station
Melendy, Renee	T-940-M	CRREL 09-10 activities
Morin, Paul	T-434-M	The Polar Geospatial Information Center: Joint support
Pettit, Joseph	T-295-M	UNAVCO GPS survey support
Szuberla, Curt	T-396-M	Installation of a CTBT class infrasound station
Thoman, Bruce	T-927-M	NASA/McMurdo Ground Station (MG1)

Return to Index

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Project Details 2012-2013

Synergistic Effects Of Iron, Carbon Dioxide And Temperature On The Fate Of Nitrate: Implications For Future Changes In Export Production In The Southern Ocean

Program Manager:
Dr. Charles Amsler

Event Number: B-394-M

ASC POC/Implementer:
Addie Coyac / Cara Sucher

Dr. Andrew Allen (Principal Investigator)
aallen@jcvi.org

J. Craig Venter Institute
San Diego, California

Supporting Stations: McMurdo Station
Research Locations: McMurdo Sound

Project Description:

This project uses a novel combination of research approaches to evaluate the effects of temperature, carbon dioxide and iron on three ecologically and biogeochemically critical Southern Ocean phytoplankton functional groups: Large centric diatoms, small pennate diatoms, and Phaeocystis antarctica. Dominance shifts between these three major algal groups have very different consequences for nutrient and carbon biogeochemistry in the rapidly changing Antarctic marine environments. Researchers aim to understand how the individual and combined influences of these three variables affect Southern Ocean phytoplankton community structure, and to determine how these assemblage-level responses are linked to fundamental cellular responses at the levels of nutrient physiology and gene expression. The goal is to build a knowledge base of polar phytoplankton genomics and physiology. In year one, researchers will evaluate the influence of temperature, partial carbon dioxide (pCO2) and iron on model isolates from these three major Antarctic phytoplankton.

Field Season Overview:

A team of ten will be based on station and make day trips by helicopter to McMurdo Sound near the edge of the first year ice. They will filter water for RNA and DNA samples and collect water samples for incubation experiments in Crary lab. The incubation experiments must be initiated the

Project Indexes
Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites
Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season
Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

same day that the water is collected. The experiment will take place outside the lab and will run for about three weeks. Additional samples will be collected during this time.

Deploying Team Members:

- Andrew Allen (PI)
- Erin Bertrand
- Erin Bertrand
- Deborah Bronk (Co-PI)
- Jeffrey Hoffman
- David Hutchins (Co-PI)
- Jeff McQuaid
- Rachel Sipler
- Jenna Spackeen
- Nathan Walworth
- Kai Xu

Return to Index

Project Details 2012-2013

Collaborative Research: Microbial Community Assembly In Coastal Waters Of The Western Antarctic Peninsula

Program Manager:
Dr. Diana Nemergut

Event Number: B-228-P

ASC POC/Implementer:
Philip Spindler / Samina Ouda

Dr. Linda Angela Amaral Zettler (Principal Investigator)
amaral@mbl.edu

Marine Biological Laboratory (MBL)
Woods Hole, Massachusetts

Supporting Stations: Palmer Station
Research Locations: Palmer Station

Project Description:

The general plan includes a departure from Valparaiso, Chile. The cruise track is attached in "my project files", and includes a 2000 n-mi sampling cruise track to the northwest of Chile, and a short cruise track to the southwest of Arica, Chile. The locations for an extended 5-day station will be selected underway. Peruvian and Chilean EEZ permits have been applied for to work in these waters if a sampling site is picked in Peruvian or Chilean waters. The 5 day process stations will include CTDs to collect water for different experiments and the deployment of floating sediment traps and in situ incubators. During the 5-day station, we will deploy 4 sediment traps that contain GPS tracking system. We will follow the sediment traps as they drift with currents.

Field Season Overview:

This team requests a 33 day cruise on the Nathaniel B Palmer (NBP), departing from Valparaiso, Chile to study the low oxygen water column in the Eastern tropical South Pacific. We are studying microbial nitrogen transformations, which are unique to this region. In the absence of oxygen (approximately 100 - 600 m water column depth), different microbes flourish than the microbes in oxygenated water columns, and we are trying to find out what microbes are there, what are their rates of metabolic activity, and how do their activities affect not just the local water column chemistry, but the entire global ocean. The cruise will deploy approximately 150 CTDs to

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

collect water samples for dissolved oxygen and nutrient analysis over 50 stations. Two of the sample sites will be occupied for several days for extensive experimental work. These sites will be chosen based on hydrography and water-column oxygen content. Floating sediment traps will be deployed, and rate measurements using stable isotope tracers will be conducted. The cruise cargo will be sent to the port of departure by the Principal Investigator using a ship agent of their choice. An exception will be made for compressed gases and chemicals. They will be shipped via the USAP cargo system (Pt. Hueneme to Punta Arenas, Chile) prior to the vessel's departure from Punta Arenas. The PI may decide to return to Arica for a passenger exchange during the cruise – the transit time for this passenger exchange will be taken out of the 33 cruise days.

Deploying Team Members:

- Linda Amaral Zettler (PI)
- Sharon Grim
- Sarah Laperriere
- Catherine Luria
- Erik Zettler

Return to Index

Project Details 2012-2013

Global Seismograph Station At South Pole And Palmer Station

Program Manager:
Dr. Mark Kurz

Event Number: G-090-P/S
NSF/EAR 1261681

ASC POC/Implementer:
Philip Spindler / Samina Ouda

Mr. Kent Anderson (Principal Investigator)
kent@iris.edu

United States Geological Survey
Albuquerque Seismological Labratory
Sandia Park, New Mexico

Supporting Stations: Palmer Station, South Pole Station
Research Locations: TerraLab/Seismic Vault, Quiet Sector

Project Description:

Field Season Overview:
No deployment is required.

Return to Index

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Project Details 2012-2013

COLLABORATIVE RESEARCH: EAGER: Evaluating The Suitability Of The Larsen Basin For Testing The Cretaceous Glaciation Hypothesis

Program Manager:
Dr. Alexandra Isern

Event Number: G-432-E

ASC POC/Implementer:
Cara Ferrier

Dr. David L. Barbeau (Principal Investigator)
dbarbeau@geol.sc.edu

University of South Carolina
Columbia, South Carolina

Supporting Stations: Special Project
Research Locations: James Ross Island Region

Project Description:

Deploying Team Members:

- John Evans
- Erin Gilpin
- Benjamin Oliver
- Jonathan Pratt
- Marissa Wright

Return to Index

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Project Details 2012-2013

PostDoctoral Research Fellowship

Program Manager:
Dr. Charles Amsler

Event Number: B-018-P
NSF/PLR Award 1204266

ASC POC/Implementer:
Philip Spindler / Samina Ouda

Dr. Shelley R Bench (Principal Investigator)
shellierb@gmail.com

Stanford University
Environmental Earth System Science
San Jose, California

Supporting Stations: Palmer Station
Research Locations: Palmer Station

Project Description:

The West Antarctic Peninsula (WAP) is undergoing some of the most dramatic warming on the globe, with correspondingly rapid ecosystem changes. Research, especially from work carried out by the Palmer LTER program, has shown that resulting changes are occurring to phytoplankton of the Western Antarctic Peninsula waters, but few details are known about species composition and metabolic activity. The objective of this three-year project is to develop microarrays that can be used by the scientific community in coming years to assess changes to community composition and gene expression. The microarrays will be based on high-throughput sequencing of samples collected in the first year. The goal this year is to collect high-biomass and high-quality phytoplankton samples for DNA and RNA sequencing. In order to capture the intra-annual community changes, samples will be collected by filtering off-shore water at regular intervals throughout the entire season (October to April).

Field Season Overview:

One field team member will collect water samples once or twice weekly from 10m depth. Most sampling will be done at a single offshore station using a submersible pump or Go-Flo bottles from a Zodiac inflatable boat. Samples will be collected twice weekly. In addition, samples will be collected from a subset of stations in the sampling grid during the annual LTER cruise on the ARSV Laurence M. Gould. While on station, the PI will train other scientists on station in the collection and processing protocols, so sampling can

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

continue once weekly while the PI is on the LTER cruise and for the last few weeks of the field season.

Deploying Team Members:

- Shelley Bench (PI)

Return to Index

Project Details 2012-2013

International Cryospheric Exploration Through Collaborative Aerogeophysical Profiling/Operation Ice Bridge (OIB)

Program Manager:
Dr. Alexandra Isern

Event Number: G-098-M

ASC POC/Implementer:
Leslie Blank / Brian Johnson

Dr. Donald Blankenship (Principal Investigator)
blank@ig.utexas.edu

University of Texas Austin
Institute for Geophysics
Austin, Texas

Supporting Stations: McMurdo Station
Research Locations: Williams Field / Dumont d'Urville / Terra Nova Bay / Casey and Davis Stations

Project Description:

Data on changes in ice sheet surface elevation is a critical component of an extended time series dataset which will help resolve questions about the social impact of global warming. The collection of this data has been interrupted with the 2009 failure of the Ice, Cloud, and land Elevation Satellite (ICESat) and the replacement satellite will not be ready for launch until 2015. In the interim, NASA has initiated Operation Ice Bridge (OIB) to collect surface elevation data in critical regions using NASA's DC-8 long-range aircraft. Departing from the tip of South America (Punta Arenas, Chile), the DC-8's range is limited to coastal regions of West Antarctica. Using McMurdo-based logistics and resources this project will collect collect up to seven hours (covering 2,000 kilometers) of high resolution, multi-instrumented data per flight in the East Antarctica interior. This aerial capability eliminates the need for deep field support, greatly reducing both transit costs and logistical burdens.

Field Season Overview:

Operating under NSF contract, Kenn-Borek Air's Basler BT-67, (call sign C-GJKB) will make 25 aerogeophysical survey flights from McMurdo, Dumond d'Urville (France) and Casey and Davis Stations (Australia). C-GJKB will be outfitted with the following active emitters: VHF ice penetrating radar, HF ice

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

penetrating radar, and a scanning lidar. McMurdo Station will provide standard fixed wing operations support such as fuel, parking and tiedowns, electrical power, weather forcasting, flight following, and integration into the daily flight schedule. Logistics at other stations will be coordinated directly between NASA and those national programs.

Deploying Team Members:

- Donald Blankenship (PI)
- Gonzalo Echeverry
- Jamin Greenbaum
- Chad Greene
- Cyril Grima
- Gail Gutowski
- Anatoly Mironov
- Gregory Ng
- Duncan Young (Team Leader)

Return to Index

Project Details 2012-2013

The Cellular Stress Response In Cold-Adapted Organisms: Building Novel Mechanistic Links Between Heat Stress, Cell Cycle Arrest And Apoptosis In Antarctic Fishes.

Program Manager:
Dr. Diana Nemergut

Event Number: B-308-M

ASC POC/Implementer:
John Rand / Cara Sucher

Dr. Bradley Buckley (Principal Investigator)
bbuckley@pdx.edu

Portland State University
Department of Biology
Portland, Oregon

Supporting Stations: McMurdo Station
Research Locations: Sea ice at Cape Evans / Inaccessible Island / McMurdo jetty, Crary Lab

Project Description:

The primary goals of this project concern the biology of the cold-adapted fishes of Antarctica, specifically those that inhabit the waters of McMurdo Sound. The specific research objectives are to determine the impact that elevated (but not lethal) temperatures have on the cellular biology and physiology of common McMurdo Sound fish species. The goal is to determine the impact that rising seawater temperatures may have on the ecology of these important and environmentally sensitive species.

Field Season Overview:

Three researchers will deploy to McMurdo as early in October as possible and will redeploy when sea ice contitions deteriorate. They will make day trips to sea ice locations proven to be superb sites for the target species (Trematomus bernacchii and Pagothenia borckgrevinki) and drill holes by hand using Jiffy drills. The fish will be returned to the Crary aquarium and maintained in a seawater tank. Tissue samples will be taken and preserved for return to the home institution.

Deploying Team Members:

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

- Bradley Buckley (PI)
- Daniel Hassumani
- Marissa Lee

Return to Index

Project Details 2012-2013

Collaborative Research: Ocean-Ice-Atmosphere Interactions In The Terra Nova Bay Polynya

The project's instrumented unmanned aerial vehicle (UAV) just launched from a specially-fitted USAP truck. Photo courtesy of John Cassano.

Program Manager:
Dr. Peter Milne

Event Number: O-240-M

ASC POC/Implementer:
John Rand / Beverly Walker

Dr. John Cassano (Principal Investigator)
john.cassano@colorado.edu

University of Colorado Boulder
CIRES
Boulder, Colorado

Supporting Stations: McMurdo Station
Research Locations: Pegasus Field / Williams Fields / Sea ice

Project Description:

Antarctic coastal polynas are, at the same time, ice-free and sea ice factories. They are pools of open water often surrounded by miles of sea ice. Scientists' ability to model the formation and persistence of these productive and diverse ocean ecosystems is hampered by the relative lack of in situ meteorological and physical oceanographic observations, especially during the inhospitable conditions of their formation and activity during the polar night. A key technological innovation that will enable progress in understanding polynyas is the use of instrumented Unmanned Aerial Vehicles (UAV). Project researchers will fly UAVs from McMurdo Station to Terra Nova Bay to make in situ measurements of the atmospheric boundary layer.

Field Season Overview:

Six participants will deploy to McMurdo Station at WINFLY. Making day-trips to the local airfields and sea-ice locations, they will launch Small Unmanned Meteorological Observer (SUMO) UAVs. During flights, researchers will monitor vehicle status, location and receive data telemetry.

Deploying Team Members:

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

- John Cassano (PI)
- Cameron Hall
- Paul Herrmann
- Peter Kernebone
- Shelley Knuth (Co-PI)
- Nickolas Logan

Return to Index

Project Details 2012-2013

Antarctic Notothenioid Fish Freeze Avoidance And Genome-Wide Evolution For Life In The Cold

Program Manager:
Dr. Charles Amsler

Event Number: B-010-L/M/P

ASC POC/Implementer:
Addie Coyac / Cara Sucher

Dr. Chi-Hing Christina Cheng (Principal Investigator)
c-cheng@illinois.edu

University of Illinois Urbana
Urbana, Illinois

Supporting Stations: ARSV Laurence M. Gould, McMurdo Station, Palmer Station

Research Locations: McMurdo Sound

Project Description:

This project studies the two intertwined adaptive phenotypes of Antarctic notothenioid fish evolved for cold survival: The ability to avoid freezing and the system-wide ability to perform normal daily cellular and physiological functions at freezing temperatures. In the field, researchers will collect fish and keep them at ambient temperatures to determine how much ice is in the spleen. These results will be compared to results from Palmer Station where the temperatures are milder and ice is present during the winter. Field work also includes collecting tissue and blood samples that will be returned to the home institution for genomic analysis and transcriptonimic studies. The transcriptonomic data and additional resources to be developed will also support Antarctic fish genome sequencing projects that have commenced in collaboration with the Beijing Genomics Institute (BGI) independent of this award.

Field Season Overview:

Seven project participants will deploy to McMurdo this austral summer season. Next year in the austral spring (July-August), six project participants will deploy to Palmer Station onboard the LMG. During day-trips to the sea ice, team members will collect specimens by trap and hook-and-line fishing through Jiffy drill holes, as well as diving through dive holes to collect notothenioid fishes from McMurdo Sound. They will fish for the Antarctic toothfish (Dissostichus mawsoni) using a winched vertical line, to obtain a

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

complete set of all tissues for transcriptome sequencing to generate a comprehensive reference transcriptome for this species. The team will collect data from CTD loggers (conductivity, temperature, depth) and will deploy temperature-depth recorders that will be retrieved by staff divers two years later in 2014-15. Several of the field experiments require the coldest possible flow-through ambient seawater to ensure that environment ice crystals in experimental fish are not inadvertently melted. A fish hut on the jetty will serve as a portable extreme-cold water aquarium to keep the experimental fish and carry out the studies.

Deploying Team Members:

- Chi-Hing Christina Cheng (PI)
- Paul Cziko
- Art DeVries (Co-PI)
- Elliot DeVries
- Lauren Fields
- Konrad Meister
- Katherine Murphy

Return to Index

Project Details 2012-2013

Collaborative Research: Dating And Modeling The Last Deglaciation Of The Ross Sea Sector Of The West Antarctic Ice Sheet

Program Manager:
Dr. Julie Palais

Event Number: I-311-M

ASC POC/Implementer:
Elizabeth Watson / Jessica Jenkins

Dr. Peter U. Clark (Principal Investigator)
clarkp@onid.orst.edu

Oregon State University
Corvallis, Oregon

Supporting Stations: McMurdo Station
Research Locations: Cape Crozier / Inexpressible Island / Taylor Valley / Minna Bluff

Project Description:

This project seeks to improve our understanding of the last deglaciation of the Ross Sea sector by developing new geochronologic constraints with in situ cosmogenic nuclides and simulating the ice-sheet recession using a state-of-the-art model of the Antarctic Ice Sheet. The field work will include sampling boulders in the McMurdo Sound region (Hjorth Hill, near Blue Glacier, Ross Island, and Minna Bluff).

Field Season Overview:

Project participants will occupy tent camps on Hjorth Hill, near Blue Glacier, and Minna Bluff for approximately five days in each location, with camp moves by helicopter. The field team will also make daily helicopter trips to Capes Bird, Royds, and Crozier.

Deploying Team Members:

- Peter Clark (PI)
- Mark Kurz (Co-PI)

Return to Index

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

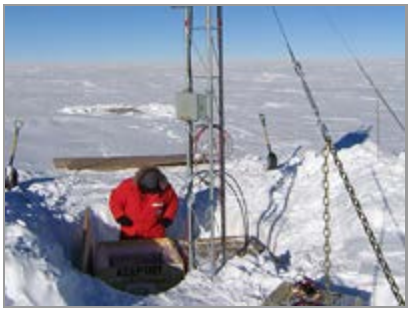
2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Project Details 2012-2013

Collaborative Research: Polar Experiment Network For Geospace Upper-Atmosphere Investigations: Interhemispheric Investigations Along The 40-Degree Magnetic Meridian



The AAL-PIP system supports a suite of space weather instruments including fluxgate and ULF search-coil magnetometers as well as a scientific quality dual-frequency GPS. Photo Credit: Hyomin Kim.

Program Manager:
Dr. Vladimir Papitashvili

Event Number: A-106-M/S

ASC POC/Implementer:
Leslie Blank / Brian Johnson

Dr. C. Robert Clauer (Principal Investigator)
rclauer@vt.edu

Virginia Tech
Hampton, Virginia

Supporting Stations: McMurdo Station, South Pole Station
Research Locations: Antarctic Plateau

Project Description:

The solar wind-magnetosphere-ionosphere system and the space weather it controls is a complex and dynamic environment that affect critical infrastructure such as satellite communications and power grids. To forecast, and thus adapt to, the effects of weather events researchers must develop accurate geomagnetic models of the Sun-Earth environment. The northern hemisphere is relatively well instrumented, however the southern hemisphere is not. Over the course of four years, this project will establish a chain of Autonomous Adaptive Low-Power Instrument Platforms (AAL-PIP) along the 40-degree magnetic meridian to obtain measurements conjugate to the west coast of Greenland for the investigation of interhemispheric electrodynamic coupling.

Field Season Overview:

Four stations have been installed and are being tested at South Pole. This field season, five participants will disassemble the three correctly-performing test stations and redeploy them to remote locations on the Antarctic Plateau.

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

They will attempt the repair the magnetometer that has failed and then test this system for another year at South Pole. If the test is successful, this station will be deployed to the east Antarctic Plateau next year. If not, it will be returned to be diagnosed and repaired in our laboratory at the University of Michigan.

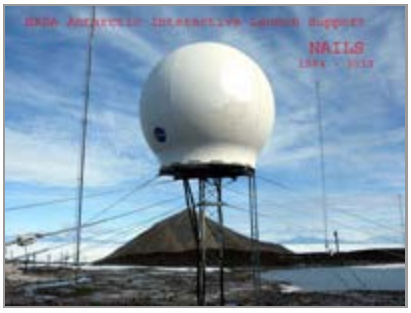
Deploying Team Members:

- Chadwin Fish
- Chadwin Fish
- Hyomin Kim (Team Leader)
- Adam Reynolds
- Karthik Venkataramani
- Zhonghua Xu

Return to Index

Project Details 2012-2013

TDRSS And NAILS



The NAILS radome at T-Site. Photo courtesy of "NASA Mike" Comberiate.

Program Manager:
Mr. Pat Smith

Event Number: T-966-M

ASC POC/Implementer:
John Rand / Joe Harrigan

Mr. Mike Comberiate (Principal Investigator)
michael.a.comberiate@nasa.gov

National Aeronautics and Space Administration
Goddard Space Flight Center
Greenbelt, Maryland

Supporting Stations: McMurdo Station
Research Locations: Black Island / T-Site

Project Description:

Black Island hosts an uplink station to the Tracking and Data Relay Satellite System (TDRSS). TDRSS is a communication signal relay system that provides tracking and data acquisition services between low-earth orbiting spacecraft and the stateside control and data processing facilities of NASA and NOAA. The orange-and-white radome at T-Site above McMurdo hosts the NASA Antarctic Interactive Launch Support (NAILS) two-meter satellite tracking station. This technical project maintains and upgrades these systems.

Field Season Overview:

New hardware and software installed last season on TDRSS now enables simultaneous telemetry collection at L-band and commanding at S-band. Field team members will test the new system, install a new radio system, and upgrade the existing remote control software for NAILS. This will result in a move from the NSF Router onto the NOAA router for a secure, dedicated channel. Deploying team members will also train the winter-over caretaker. At T-Site each season, field team members replace or refurbish the motors in the antenna and recalibrate the antenna because of the increased usage as an L-band receive system. At South Pole Station, Mike Comberiate intends to donate an interactive touchscreen system that was installed in the International Antarctic Centre in Christchurch over the past

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

decade and at Goddard Space Flight Center (GSFC). It contains two- to three-minute video segments that document many of the historical events during the long-standing NASA-NSF collaboration in the area of space technologies.

Deploying Team Members:

- Mike Comberiate (PI)
- Kurt Rush
- Gabriel Trisca
- Randy Westlund

Return to Index

Project Details 2012-2013

East Antarctic Outlet Glacier Dynamics

Program Manager:
Dr. Julie Palais

Event Number: I-210-M
NSF/PLR Award 1141866

ASC POC/Implementer:
John Rand / Elizabeth Kauffman

Dr. Howard Conway (Principal Investigator)
conway@ess.washington.edu

University of Washington
Earth and Space Sciences
Seattle, Washington

Supporting Stations: McMurdo Station
Research Locations: Beardmore Glacier

Project Description:

Researchers will conduct a suite of experiments to study spatial and temporal variations of basal conditions beneath Beardmore Glacier, an East Antarctic outlet glacier that discharges into the Ross Sea Embayment. Measurements include: (1) airborne and surface-based radar to map the ice thickness and geometry of the sub-glacial trough; and (2) active and passive seismic experiments, together with ground-based radar and GPS measurements to map spatial and temporal variations of conditions at the ice-bed interface. The observational data will be used to constrain dynamic models of glacier flow.

Field Season Overview:

Team members will conduct airborne and ground-based radar, seismic and GPS measurements on Beardmore Glacier. Airborne radar surveys will be conducted to fill in gaps in our preliminary map of bed topography. Ground-based measurements this season will focus on the downstream end of the glacier near the grounding line. The team will spend about six weeks conducting active and passive seismic experiments and collecting about 100 km of gridded radar data.

Deploying Team Members:

- Howard Conway (PI)
- Maurice Conway

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

- Michael Hay
- Michelle Koutnik (Co-PI)
- J. Paul Winberry (Co-PI)

Return to Index

Project Details 2012-2013

Collaborative Research: Weddell Seals As Autonomous Sensors Of The Winter Oceanography Of The Ross Sea

Program Manager:
Dr. Diana Nemergut

Event Number: B-232-M

ASC POC/Implementer:
Leslie Blank / Cara Sucher

Dr. Daniel Costa (Principal Investigator)
costa@biology.ucsc.edu

University of California Santa Cruz
Long Marine Lab
Santa Cruz, California

Supporting Stations: McMurdo Station
Research Locations: Sea Ice

Project Description:

Recent advances in satellite-linked data logging have made it possible to correlate foraging behavior with environmental variables. These technological advances also enable marine mammals to be used as cost-effective platforms from which to collect detailed oceanographic data on a scale not possible with conventional methods. This project will address two complementary themes: (1) The winter foraging behavior and habitat utilization of the Weddell seal, and (2) the use of oceanographic data collected by the seals to better understand the dynamics of the upper water column of Ross Sea. Using these technologies over two years, researchers will measure animal physiological condition in the austral spring and fall. They can then correlate diving patterns with aerobic capacity and patterns of mass and body condition change.

Field Season Overview:

This is the last field season for this award. Four participants will deploy to recover instruments deployed last field season and to assess the physiological condition of same seals that were assessed then. Specific work sites will depend on ice conditions and seal locations. More than half of the recoveries will likely be concentrated in the colonies in Erebus Bay, as most females tagged in the area were reproductively mature adults that had previously been recorded as breeding there.

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Deploying Team Members:

- Jennifer Burns (Co-PI)
- Daniel Costa (PI)
- Kim Goetz
- Michelle Shero

Return to Index

Project Details 2012-2013

T-500-O

Program Manager:
Mr. Mike Scheuermann

Event Number: T-500-M

ASC POC/Implementer:
Elizabeth Kauffman

Mr. Brian Christopher Crocker (Principal Investigator)
bcrocker@borekair.com

Kenn Borek Air Ltd
Calgary, Alberta, Undefined

Supporting Stations: McMurdo Station
Research Locations:

Project Description:
This project supplies required fixed wing support to the NSF US Antarctic Program.

Field Season Overview:
Kenn Borek Air Ltd will be supplying fixed wing support to the NSF for the 2012-2013 season. They will be using a planned four(4) DHC-6 (Twin Otter) aircraft and a twoTurbine DC3 (Basler) aircraft. They will be based in McMurdo and fly as required to the various field camps/site including the South Pole station. The overall footprint for each aircraft will be a planned thee to four crew members. This may increase depending on the scheduled work for the season. The aircraft will be operated out of the Ice Runway until the scheduled move to Pegasus.

Return to Index

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Project Details 2012-2013

LARISSA Project Participation RVIB Araon Cruise In 2013

Program Manager:
Dr. Sonia Esperanca

Event Number: C-515-E/L
NSF/PLR Award 1143981

ASC POC/Implementer:
Adam Jenkins

Dr. Eugene Domack (Principal Investigator)
edomack@hamilton.edu

Hamilton College
Geology
Clinton, New York

Supporting Stations: Special Project, ARSV Laurence M. Gould

Research Locations:

Project Description:

In collaboration with the Korean Antarctic Program, aboard the research icebreaker Araon, the LARISSA PI team will return to the northern Antarctic Peninsula region to complete the data collection related to the current LARISSA grant, and will remove all US installations and gear. The primary research site is again the eastern Peninsula, in particular the Larsen B and Larsen A embayments. If sea ice conditions are impassible for these areas, follow-on work in the more northern east Antarctic Peninsula waters will be conducted, as well as follow-up work on the fjords adjacent to the Larsen B embayment on the western AP coast. Helicopters on the Araon will attempt to support glaciological and terrestrial geophysics work from the ship in any of these cases.

Field Season Overview:

LARISSA team members will depart from Punta Arenas, Chile on the Korean vessel, Araon. They will call at King Sejong station (King George Island) for fuel offload and then continue to their sampling sites on the Western Antarctic Peninsula.

Deploying Team Members:

- Robert Bauer
- Allegra Bianchini

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

- Jennifer Bohlander
- Stefanie Brachfeld (Co-PI)
- Randelle Bundy
- Jennifer Campo
- Mattias Cape
- Andrew Christ
- Eugene Domack (PI)
- Bruce Huber (Co-PI)
- Anastasia Kyrmanidou
- Amy Leventer (Co-PI)
- Erin Pettit (Co-PI)
- Natalie Romanoff
- Ted Scambos (Co-PI)
- Maria Vernet (Co-PI)
- Julia Wellner (Co-PI)

Return to Index

Project Details 2012-2013

The Seasonal Cycle Of Export Production In An Antarctic Coastal Marine Ecosystem

Program Manager:
Dr. Diana Nemergut

Event Number: B-252-P

ASC POC/Implementer:
Leslie Blank / Philip Spindler

Dr. Hugh William Ducklow (Principal Investigator)
hducklow@ldeo.columbia.edu

Columbia University
Lamont Doherty Earth Observatory
Palisades, New York

Supporting Stations: Palmer Station
Research Locations: West Antarctic Peninsula

Project Description:

Over some range of space and time scales, the fraction of primary production exported from the ecosystem is conceptually equivalent to the net community production (NCP), although in practice the two quantities are not always comparable. In the cold, low-light Antarctic coastal region, the export production should be approximated by nitrate-based new production, although, again, the time and space scales over which equivalence is manifested are poorly-defined. There have been relatively few measurements of these three processes in polar regions, and even fewer systematic time series investigations conducted at the proper scales to uncover mechanisms. In consequence, the physical, ecological and biogeochemical mechanisms regulating new production, NCP and export production remain poorly-characterized, especially in the remote and harsh Antarctic environment. Project researchers will collect a comprehensive data set on the seasonal cycles of new, export and net community production, leading to a better understanding of the production and export of organic matter in a coastal Antarctic marine ecosystem.

Field Season Overview:

During the annual LTER work at Palmer Station and onboard the science cruise, project team members will collect seawater samples on a weekly basis from October to April. Sediment traps will be deployed weekly at two depths to collect particles for determination of the ratios of Carbon to

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Nitrogen to Thorium 234 on sinking particles.

Deploying Team Members:

- Michael Stukel

Return to Index

Project Details 2012-2013

Euphausia Superba Feeding Using DNA Analysis Of Gut Contents

Program Manager:
(Other)

Event Number: B-014-N
NSF/PLR Award 1142107

ASC POC/Implementer:

Dr. Edward G Durbin (Principal Investigator)
edurbin@gso.uri.edu

University of Rhode Island
Graduate School of Oceanography
Narragansett, Rhode Island

Supporting Stations: RV/IB Nathaniel B. Palmer

Research Locations:

Project Description:

Deploying Team Members:

- Richard Bell
- Bonnie Blalock
- David Casagrande
- Maria Casas
- Gang Chen
- Alison Cleary
- Samantha DeCuollo
- Michelle Dennis
- Edward Durbin (PI)
- Rebecca Graham
- Rachel Greene
- Thomas Heath II
- Gabrielle Inglis
- Bethany Jenkins

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

- Mary Kane
- Iain McCoy
- Susanne Menden-Deuer (Co-PI)
- Michael Orchard
- Christopher Roman (Co-PI)
- Tatiana Rynearson (Co-PI)
- Kerry Whittaker
- Meng Zhou (Co-PI)
- Xiaoshan Zhu
- Yiwu Zhu

Return to Index

Project Details 2012-2013

Noble Gases In The Drake Passage Aboard The ARSV Laurence M. Gould

Program Manager:
Dr. Peter Milne

Event Number: O-254-L

ASC POC/Implementer:
Addie Coyac / Bob Kluckhohn

Dr. Steven R Emerson (Principal Investigator)
emerson@u.washington.edu

University of Washington
Oceanography
Seattle, Washington

Supporting Stations: ARSV Laurence M. Gould
Research Locations: Drake Passage

Project Description:

This project aims to gain a clearer understanding of the processes that control the marine dissolved inorganic nitrogen budget (nitrate + nitrite + ammonium), which impacts the global carbon cycle as nitrate is a limiting nutrient for net biological export from the euphotic zone. Researchers will use dissolved N2/Ar as a tracer of the marine nitrogen cycle. An increase in N2/Ar with depth and water age (previous measurements) is some combination of 'preformed' value captured during subduction and subsequent denitrification. The goal of this research is to identify the physical and biological contributions to the 'background' N2/Ar ratio increase by measuring N2/Ar and other inert gas and isotope ratios (primarily Ne/Ar and Kr/Ar) in strategic locations along the flow of the deep waters of the world's ocean.

Field Season Overview:

One participant will sail onboard LMG12-12 to sample the water column in the Drake Passage using the ships rosette and CTD (conductivity-temperature-depth sensors). During the cruise, four CTD casts to full depth (two in each direction of the crossing) will be conducted, Precise temperature, salinity, and oxygen data are required for the analysis. The participant will perform Winkler oxygen titrations.

Deploying Team Members:

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

- Kevin Tempest

Return to Index

Project Details 2012-2013

RAPID: Linking The Movement Patterns And Foraging Behavior Of Humpback Whales To Their Prey Across Multiple Spatial Scales Within The LTER Study Region

Program Manager:
Dr. Diana Nemergut

Event Number: B-206-E

ASC POC/Implementer:
Adam Jenkins

Dr. Ari Seth Friedlaender (Principal Investigator)
asf7@duke.edu

Duke University
Duke University Marine Laboratory
Beaufort, North Carolina

Supporting Stations: Special Project
Research Locations:

Project Description:

This project will conduct whale tagging and prey mapping research from the R/V Point Sur in the nearshore waters around Palmer Station and the Palmer Station Long Term Ecological Research Program (LTER) study area. The Point Sur represents a unique and novel platform that could significantly augment the ability to integrate top predator studies into the LTER research program. Currently, whales are not systematically studied as part of the LTER, and there is limited time, space, and opportunity to conduct tagging operations and fine-scale quantitative prey mapping during the annual LTER cruise. By using the Point Sur, researchers seek to augment and improve the understanding of cetaceans within the context and framework of the LTER.

Field Season Overview:

Researchers will sail on the R/V Point Sur for two weeks of dedicated time in February 2013 to deploy tags on whales and conduct oceanographic and prey mapping surveys The field team will fly directly to King George Island from Punta Arenas, Chile, and deploy to the Pointy Sur directly. Tagging and prey mapping work will occur around the Gerlache Strait and associated bays. The team will then return to King George Island to fly back to Punta Arenas.

Deploying Team Members:

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

- Matthew Bowers
- John Durban
- Ari Friedlaender (PI)
- Nick Gales (Co-PI)
- Doug Nowacek (Co-PI)
- Robert Pitman
- Andrew Read
- Alison Stimpert

Return to Index

Project Details 2012-2013

Collaborative Research: TRacing The Fate Of Algal Carbon Export In The Ross Sea (TRACERS)

Program Manager:
Dr. Peter Milne

Event Number: O-309-N

ASC POC/Implementer:
Adam Jenkins / Robert Kluckhohn

Dr. Dennis Arthur Hansell (Principal Investigator)
dhansell@rsmas.miami.edu

University of Miami
RSMAS/MAC
Miami, Florida

Supporting Stations: RV/IB Nathaniel B. Palmer
Research Locations:

Project Description:

There is a large export of sinking biogenic, organic particles to the deep Ross Sea each spring/summer. The fate of this material is normally assumed to be 1) loss to the seafloor and, 2) remineralization in the water column while sinking. A third fate, which researchers will explore in this work, is the water column accumulation of both suspended and dissolved organic matter. They will assess export production both from the surface layer (productivity measurements) and within the deeper water column (sediment traps), and will assess accumulation of organic matter within the water column using both geochemical and optical techniques. The optics will inform as to the abundance and distribution of particles with depth, while measures of particulate and dissolved organic carbon will tell the concentrations of those carbon pools.

Field Season Overview:

Field team members will sail on the R/V Nathaniel B. Palmer and will deploy a conductivity-temperature-depth (CTD) sampling rosette. They will also conduct net tows and use sediment traps.

Deploying Team Members:

- Sarah Bercovici
- Alexander Bochdansky (Co-PI)

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

- Melissa Clouse
- Hans Dejong
- Giacomo DiTullio (Co-PI)
- Robert Dunbar (Co-PI)
- Cody Garrison
- Santiago Gonzalez
- Dennis Hansell (PI)
- Roberta Hansman
- Brian Kendrick
- David Koweek
- Allison Lee
- Peter Lee
- Andrew Margolin
- Meredith Miles
- David Mucciarone
- Christina Riesselman
- Rachel Stevens

Return to Index

Project Details 2012-2013

CAREER: Deciphering The Tectonic History Of The Transantarctic Mountains And The Wilkes Subglacial Basin

Program Manager:
Dr. Mark Kurz

Event Number: G-061-M
NSF/PLR Award 1148982

ASC POC/Implementer:
Leslie Blank / Elizabeth Kauffman

Dr. Samantha Hansen (Principal Investigator)
shansen@geo.ua.edu

University of Alabama Tuscaloosa
Department of Geological Sciences
Tuscaloosa, Alabama

Supporting Stations: McMurdo Station
Research Locations: Northern Transantarctic Mountains / Wilkes Subglacial Basin

Project Description:

An understanding of the tectonic development of Antarctica requires characterization of the seismic structure beneath the Transantarctic Mountains (TAMs) and the Wilkes Subglacial Basin (WSB). Current constraints on the crustal thickness and seismic velocity structure beneath the TAMs and the WSB are limited, leading to uncertainties over competing geodynamic models. To broaden the investigation of this region, a new 15-station seismic deployment, the Transantarctic Mountains Northern Network (TAMNNET), is being installed across the northern TAMs and the WSB. The study will address four fundamental questions: (1) How variable is the crustal structure beneath the TAMs? (2) Is the WSB characterized by thin crust and thick sedimentary layers? (3) How do seismic velocities vary along strike beneath the TAMs? And (4) How did the TAMs and the WSB originate and how does their formation relate to the geologic history of Antarctica? Data from TAMNNET will be combined with that from other previous and ongoing seismic initiatives and will be analyzed using proven modeling techniques to generate an unprecedented image of the seismic structure beneath the TAMs and the WSB.

Field Season Overview:

The TAMNNET project will be conducted over a five year period. During the

Project Indexes
Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites
Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season
Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

first field season, 2012-2013, polar seismic equipment from IRIS-PASSCAL will be deployed at 15 locations across the northern Transantarctic Mountains and onto the East Antarctic plateau. In years two and three, the stations will be serviced and data will be collected. The stations will be decommissioned in year four and the final year will will be dedicated to data analysis and modeling; no fieldwork will be required.

Participants will deploy to McMurdo and use Twin Otter support for transport into the field. Installation of each station is expected to take take 4-5 hours of ground time to install and about half that for service and decommissioning. TAMNNET will re-use the POLENET seismic transect equipment.

Deploying Team Members:

- Brian DuBay
- Jordan Graw
- Samantha Hansen (PI)
- Lindsey Kenyon
- Yongcheol Park

Return to Index

Project Details 2012-2013

Reactive Gas Chemistry In The Dome C Snowpack And Its Influence On Surface-Layer Chemistry And Ice-Core Records

Program Manager:
Dr. Peter Milne

Event Number: O-233-M
NSF/PLR Award 1142145

ASC POC/Implementer:
Leslie Blank / Elizabeth Kauffman

Dr. Detlev Helmig (Principal Investigator)
detlev.helmig@colorado.edu

University of Colorado Boulder
INSTAAR
Boulder, Colorado

Supporting Stations: McMurdo Station
Research Locations: Dome C

Project Description:

This US-French collaborative project will investigate snow photochemical processes, their influence on surface exchanges, and the potential impact of this chemistry on the conservation of atmospheric composition in ice cores. It entails the installation and operation of an air sampling system for the continuous, year-round sampling and analysis of snow interstitial air (SIA) drawn from within the snowpack and from the above-snow atmospheric surface layer at Dome C. Over two summers and one winter, the sensors will collect data on highly vertically resolved continuous ozone, carbon monoxide, carbon dioxide, and gasesous elemental mercury (GEM) chemical gradient from within the snowpack to two meters depth and from three above-surface inlets representing the lowest 10 meters of the atmosphere at Dome C.

Field Season Overview:

As early as possible in the 2012-13 field season, four participants will deploy to Dome C to install the air sampling system. The instrumentation will be removed at the end of the 2013-21014 field season before Dome C closes for the winter.

Deploying Team Members:

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

- Detlev Helmig (PI)
- Joel Savarino (Co-PI)
- Brie Van Dam

Return to Index

Project Details 2012-2013

Collaborative Research: Application Of Distributed Temperature Sensors (DTS) For Antarctic Ice Shelves And Cavities

Program Manager:
Dr. Peter Milne

Event Number: O-286-M

ASC POC/Implementer:
Chad Naughton / Cara Sucher

Dr. David Holland (Principal Investigator)
dmh4@nyu.edu

Department of Earth Sciences
New York, New York

Supporting Stations: McMurdo Station
Research Locations: Windless Bight

Project Description:

This project will test the feasibility of using distributed temperature sensors (DTS) to monitor water temperature beneath the ice shelf in West Antarctica. A fiber optic cable, which will measure the temperature at 1-meter intervals, will be depoloyed downhole through a 40-millimeter hole drilled by the new hot point drill. The cable will hang from the surface of the ice into the ocean cavity below, reaching the seafloor. This system is expected to be lightweight and field-portable, making it logistically feasible to deploy at remote research sites to provide high-accuracy long-term observations of warmer water temperatures beneath ice shelves.

Field Season Overview:

The instrumentation was installed last field season at Windless Bight and will be removed this year. Two participants will deploy as members of Bob Bindhsadler's Pine Island Glacier (PIG) field team. At the end of the PIG work, they will make one or two day-trips to Windless Bight to remove the system and its supporting solar/wind/battery power system

Deploying Team Members:

- Carl Gladish
- David Holland (PI)

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Return to Index

Project Details 2012-2013

Augmenting The Ross Island-Area Automatic Weather Station Network To Develop A Tropospheric Ozone Climatology

Augmenting the Ross Island-area automatic weather station network to develop a tropospheric ozone climatology. Photo courtesy of Lars Kalnajs

Program Manager:
Dr. Peter Milne

Event Number: O-324-M

ASC POC/Implementer:
John Rand / Cara Sucher

Dr. Lars E Kalnajs (Principal Investigator)
kalnajs@colorado.edu

University of Colorado Boulder
Laboratory for Atmospheric and Space Physics
Boulder, Colorado

Supporting Stations: McMurdo Station
Research Locations: AWS sites near-McMurdo Station

Project Description:

The Antarctic troposphere has the least anthropogenically influenced surface air on Earth and presents a unique opportunity for the study of naturally occurring processes that control the chemical composition of our atmosphere. Of particular interest to the study of high latitude atmospheric chemistry is tropospheric ozone (O3), which exhibits predictable seasonal variations as well as poorly understood anomalies at polar sunrise. Using the existing Automatic Weather Stations (AWS) network in the McMurdo Ross Sea region, a number of photometric based ozone meters will be deployed, in order to establish a multi-season record of surface level ozone distributions in the McMurdo area. This in turn will allow a record of seasonal surface ozone variability in the Ross Sea region to be assembled.

Field Season Overview:

Two participants will deploy to service the network of ozone sensors. The instrumentation from each site will be removed and returned to McMurdo for a laboratory calibration and to perform any repairs or upgrades necessary. The team will assess the performance of the remote power systems at each site and make any necessary repairs or modifications.

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Deploying Team Members:

- Lars Kalnajs (PI)
- Thomas Reese

Return to Index

Project Details 2012-2013

Exploring The Vulnerability Of Southern Ocean Pinnipeds To Climate Change - An Integrated Approach

Program Manager:
Dr. Charles Amsler

Event Number: B-225-M
NSF/PLR Award 1142108

ASC POC/Implementer:
Samina Ouda / Jessica Jenkins

Dr. Paul Koch (Principal Investigator)
plkoch@ucsc.edu

University of California Santa Cruz
Santa Cruz, California

Supporting Stations: McMurdo Station
Research Locations: Calkin, Hobbs, Rhone and Howard Glaciers / Cape Roberts / Dunlop Island / Explorers Cove / Lakes Chad and Fryxell / Marble Point / Miers, Pearse and Salmon Valleys / Mummy Pond / Nussbaum Riegel

Project Description:

This project will investigate the response of seals in the Ross Sea to climate change over the past several thousand years. This work follows on the researcher's recent southern elephant seals project and involves examining the population structure and paleoecology of seal groups in the Ross Sea, past and present. The target species are southern elephant, crabeater, Weddell, and leopard seals, each of which has specific climate, diet and habitat preferences. Researchers will use genetic, isotopic, and chronologic data to develop an integrated understanding of the response of these mammals to major climate cooling that occurred in the Holocene beginning about a thousand years ago. Specific research objectives include locating, sampling, and identifying mummified seal remains in the Dry Valleys region (including coastal Royal Society Range, the Victoria Land Coast, and parts of the Convoy Range). Samples will be returned to the US for ancient DNA, isotopic, and radiocarbon analyses.

Field Season Overview:

Three participants will establish and work out of an independent tent camp in the Dry Valleys. Team members will move the camp once per season. They will make foot traverses and helicopter-supported day-trips from camp to locate and sample mummified seal remains.

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Deploying Team Members:

- Scott Braddock
- Paul Koch (PI)

Return to Index

Project Details 2012-2013

Pre- And Post-Molt Biology Of Emperor Penguins

Program Manager:
Dr. Diana Nemergut

Event Number: B-464-N

ASC POC/Implementer:
Addie Coyac / Robert Kluckhohn

Dr. Gerald Kooyman (Principal Investigator)
gkooyman@ucsd.edu

Scripps Institution of Oceanography
CMBB 0204
La Jolla, California

Supporting Stations: RV/IB Nathaniel B. Palmer
Research Locations: Amundsen Sea

Project Description:

The emperor penguin dives deeper and longer, fasts longer, and endures the harshest weather conditions of all diving birds. It spends about four and half months per annum deep in Antarctic pack ice away from shore and stations, and thus is largely unavailable for study. This time includes preparation for the molt, and travel to the colony to breed, a time period in which great swings in body weight occur. This study will fill an important gap in what we know about the biology of the annual cycle of the emperor by examining the post-molt period. Project objectives are to (1) Place satellite tags on 20 adult post molt birds to determine their route, rate of travel, and diving behavior as they return back to their breeding colonies; (2) Obtain an index of body condition; (3) Collect guano to determine the type of food consumed by emperor penguins in the region; and (4) Conduct shipboard surveys to sight and plot the location and abundance of adult and juvenile birds on the ship's track.

Field Season Overview:

During the NBP's trans-pacific passage from McMurdo Station to Punta Arenas, Chile, three days will be dedicated to this project. Four participants will find post-molt birds nesting on the pack ice or fast ice and attach transmitters. After transmitter attachment other birds in the neighborhood will be weighed and their state of molt determined. Team members will collect guano samples for shipboard labwork to determine food types. During the transit a 24 hour watched maintained by the field team on the bridge or other

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

appropriate observation area. Observers will evaluate and record guano color and count birds and mammals resting on the ice. In the case of birds, using high powered binoculars will make it possible to assess the age of the birds from adult, juvenile or fledgling. These counts will enable researchers to estimate the density of birds in the region.

Deploying Team Members:

- Geoffrey Gearheart
- Kim Goetz
- Nigella Hillgarth
- Gerald Kooyman (PI)

Return to Index

Project Details 2012-2013

Late Cretaceous-Paleogene Vertebrates From Antarctica: Implications For Paleobiogeography, Paleoenvironment, And Extinction In Polar Gondwana

Program Manager:
Dr. Mark Kurz

Event Number: G-182-E
NSF/PLR Award 1142129

ASC POC/Implementer:
Addie Coyac / Cara Ferrier

Dr. Matthew Lamanna (Principal Investigator)
lamannam@carnegiemnh.org

Pittsburgh, Pennsylvania

Supporting Stations: Special Project
Research Locations: James Ross, Vega, Seymour and Snow Hill Islands

Project Description:

This project will locate and collect vertebrate fossils (primarily those of fishes, marine reptiles, non-avian dinosaurs, birds and mammals) in late Cretaceous through Paleogene deposits on islands in the James Ross Island Group in the Antarctic Peninsula. Material recovered will have implications for understanding the role of the Antarctic Peninsula in the dispersal of vertebrates between West Antarctica and southernmost South America at the end of the Mesozoic and the beginning of the Cenozoic eras. Depending on the specific discoveries made, significant new light may be shed on the evolution, faunal dynamics, and/or paleobiogeography of such important vertebrate groups as non-avian dinosaurs, crown clade birds and therian mammals in the critical interval that brackets the Cretaceous-Paleogene boundary. Geological (i.e., stratigraphic, sedimentological, geochronological, and taphonomic) and paleobotanical work is also planned, to place vertebrate finds into accurate and detailed temporal and paleoenvironmental contexts.

Field Season Overview:

Participants will embark the ARSV Laurence M. Gould (LMG) in Punta Arenas, Chile. With camp and field gear, and a contract camp supervisor, they will spend three-to-four weeks on several islands in the James Ross Island Group at the northeastern extremity of the Antarctic Peninsula. The LMG will support one camp move to another island in each year. Work will

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

take place on or near the coasts of the islands. Collected fossils, screened concentrates, and/or geologic samples will be returned to the home institutions for analysis.

Deploying Team Members:

- Kerin Claeson (Co-PI)
- Julia Clarke (Co-PI)
- Jane Francis
- Zubair Jinnah (Co-PI)
- Matthew Lamanna (PI)
- Ross MacPhee (Co-PI)
- Patrick O'Connor (Co-PI)
- Steven Salisbury (Co-PI)
- Joseph Sertich (Co-PI)

Return to Index

Project Details 2012-2013

Role Of Snow Distribution Processes In Antarctic Sea Ice Mass Balance

Program Manager:
Dr. Peter Milne

Event Number: O-242-E
NSF/PLR Award 1142075

ASC POC/Implementer:
Cara Ferrier / Samina Ouda

Dr. Katherine Colby Leonard (Principal Investigator)
katherine.leonard@colorado.edu

University of Colorado Boulder
CIRES
Boulder, Colorado

Supporting Stations: Special Project
Research Locations: Weddel Sea

Project Description:

Snow depth and hence mass balance of sea ice is controlled by how blowing and drifting snow control the accumulation of snowfall on the ice and how the ice morphology control its distribution. Researchers will sail on two cruises and perform detailed measurements of drifting snow and snow distribution over sea ice.

Field Season Overview:

Two participants will join Alfred Wegener Institute expedition aboard the RV PolarStern from Cape Town, South Africa to Punta Arenas, Chile via the Weddell Sea. They will deploy nine drifting sea ice buoys that will transmit data by Iridium for the lifetime of the buoys, estimated to be 3-5 months.

Deploying Team Members:

- Katherine Leonard (PI)
- Ted Maksym (Co-PI)

Return to Index

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Project Details 2012-2013

Cryptic Hydrology Of The McMurdo Dry Valleys: Water Track Contributions To Water And Geochemical Budgets In Taylor Valley, Antarctica

Program Manager:
Dr. Alexandra Isern

Event Number: G-084-M
NSF/PLR Award 1142184

ASC POC/Implementer:
Elizabeth Watson / Jessica Jenkins

Dr. Joseph Levy (Principal Investigator)
joe.levy@utexas.edu

University of Texas Austin
Corvallis, Oregon

Supporting Stations: McMurdo Station
Research Locations: F6 / Lakes Bonney and Hoare

Project Description:

Water tracks are narrow bands of high soil moisture that route water downslope, in the absence of overland flow, through permafrost dominated soils in polar regions. In water tracks, moisture moves as shallow groundwater, flowing through the permafrost active layer (the seasonally-thawed portion of permafrost) along linear depressions in the ice table (the portion of the permafrost that remains frozen and ice-cemented during summer months), resulting in channelized flow. Water tracks represent a largely unexplored frontier for understanding basic earth processes in Antarctica. This project will quantify the contribution of water tracks to water, solute, and basic carbon cycling on Antarctic hillslopes. Researchers aim to answer several questions about water tracks in Taylor Valley: (1) How much water flows through water tracks every year? (2) How much salt moves from highlands to lowlands in water tracks? (3) How do water tracks affect rock weathering in different lithological terrains? (4) How do water tracks affect Dry Valleys carbon budgets on glacial/interglacial timescales?

Field Season Overview:

In this first field season, participants will deploy to established camps in Taylor Valley (Hoare, F6, Bonney) on a rotating basis for brief, two-to-four day stays. Helicopters will provide camp-move logistics and the team members will return to Crary Lab to process and package the samples for shipment to the home institution. The researchers will install shallow (less

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

than 50 centimeters deep) piezometers into Taylor Valley water tracks, install a small lysimeter at the Lake Hoare camp, and conduct shallow geophysical surveys (electromagnetic induction) up and down Taylor Valley.

Deploying Team Members:

- Joseph Levy (PI)

Return to Index

Project Details 2012-2013

Rapid Landscape Change In Garwood Valley: Monitoring Buried Glacier Melt And Exploring "Péwé's Lost Lake"

Program Manager:
Dr. Mark Kurz

Event Number: G-080-M
NSF/PLR Award 1212307

ASC POC/Implementer:
John Rand / Jessica Jenkins

Dr. Joseph Levy (Principal Investigator)
joe.levy@utexas.edu

University of Texas Austin
Corvallis, Oregon

Supporting Stations: McMurdo Station
Research Locations: Garwood Valley

Project Description:

This field work has three objectives: (1) Buried Ice Inventory: Comprehensively map and sample the buried ice record present in Garwood Valley in three spatial dimensions, distinguishing buried glacier ice from interbedded river ice; (2) Buried Ice Loss: Quantify the current rate of buried ice removal where ice is exposed, being eroded by the Garwood River, or being removed through thermokarst formation; and (3) Paleo-Landscape Change: Map the sedimentary sequence overlying the buried ice, and extract datable material for environmental change-rate calculations. The work entails extensive mapping and sampling activities throughout the valley and neighboring coastal sites. An autonomous meteorological station will be deployed and maintained throughout the duration of the project, including over the winter.

Field Season Overview:

A team will deploy to Garwood Valley during December of 2012 to establish a tent camp for about two weeks. The camp will serve as a base for installing meteorological station instruments and for collecting soil samples and shallow ice cores, conducting surface mapping, and conducting day trips by helicopter to proximal coastal sites to map paleo-ice flow paths based on geological evidence

Deploying Team Members:

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

- James Dickson
- Joseph Levy (PI)
- Alexander Rytel

Return to Index

Project Details 2012-2013

Antarctic Cloud Physics: Fundamental Observations From Ross Island

Program Manager:
Dr. Peter Milne

Event Number: O-314-M

ASC POC/Implementer:
Cara Sucher / John Rand

Dr. Dan Lubin (Principal Investigator)
dlubin@ucsd.edu

Scripps Institution of Oceanography
La Jolla, California

Supporting Stations: McMurdo Station
Research Locations: McMurdo Station, Arrival Heights

Project Description:

This project will make fundamental measurements of Antarctic cloud microphysical and optical properties through ground-based remote sensing at McMurdo Station. This Antarctic location is highly relevant for studies of cloud physics in three respects: 1) more fundamental understanding of key cloud nucleation and formation processes in a very cold and pristine environment, 2) validation and improvement of cloud microphysical parameterization in global climate models, and 3) improved cloud representation in regional models used for Antarctic weather prediction, leading to more reliable forecasting. Researchers will use remote sensing instrumentation consisting of: 1) an ASD spectroradiometer covering the wavelength range 350-2200 nm and recording spectra in one-minute averages continuously, and 2) ancillary broadband radiometers to monitor changes in surface albedo. Cloud thermodynamic phase, optical depth, effecitve particle size, and liquid (or ice) water path will be retrieved directly from the surface data. These surface retrievals will be merged with NASA A-Train satellite remote sensing data (CloudSat and Calipso) to yield a more complete understanding of the physical and meteorological processes that give rise to the observed cloud properties.

Field Season Overview:

One field team member from Scripps Institution of Oceanography will deploy to McMurdo Station in October to install the equipment with the help of station science technicians. The field team member will remain approximately

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

one month to ascertain proper operation, and develop data collection and backup protocols that can be turned over to the science technicians.

Deploying Team Members:

- Ryan Scott

Return to Index

Project Details 2012-2013

The Effects Of Ocean Acidification And Rising Sea Surface Temperatures On Shallow-Water Benthic Organisms In Antarctica

Doctoral students Kate Schoenrock (left) and Julie Schram (right) admire their set-up to conduct experiments on the impacts of ocean acidification and temperature rise on calcifying marine algae and invertebrates. Photo courtesy of Jim McClintock.

Program Manager:
Dr. Diana Nemergut

Event Number: B-027-P

ASC POC/Implementer:
Leslie Blank / Philip Spindler

Dr. James McClintock (Principal Investigator)
mcclinto@uab.edu

University of Alabama Birmingham
Department of Biology
Birmingham, Alabama

Supporting Stations: Palmer Station
Research Locations: Palmer Lab / Local boating area

Project Description:

The benthic flora and fauna of the shallow nearshore waters of the Antarctic Peninsula are uniquely vulnerable to the impacts of climate change. The Southern Ocean is predicted to become undersaturated in terms of both aragonite and calcite within 50 and 100 years, respectively, challenging calcification processes. Moreover, antarctic peninsular marine benthic organisms are essentially stenothermal, yet are being subjected to rising seawater temperatures. Adding to the problem, antarctic calcified benthic marine organisms are more vulnerable to ocean acidification than temperate and tropical species because they are generally weakly calcified. In a recent study researchers found that post-mortem thalli of antarctic benthic crustose algae and shells of macroinvertebrates are highly susceptible to rapid dissolution under the predicted regime of ocean acidification. The present study will extend this important analysis to living benthic macroalgae and invertebrates. It will provide an evaluation of the individual and combined

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

effects of rising ocean acidification and sea surface temperatures on shallow-water calcified benthic organisms in western Antarctic Peninsula (WAP) marine communities.

Field Season Overview:

In this second and final year of this award, five field team members will deploy to Palmer Station on varying schedules. Two project divers will be on station for approximately three months. Two of the PIs will deploy at the beginning of the season. A volunteer station staff member will serve as dive tender for Zodiac-based dives. Team members will use lab space and outdoor tanks for “mesocosm” experiments, similar to those done by this group in the past.

Deploying Team Members:

- Charles Amsler
- Margaret Amsler
- Kathryn Schoenrock
- Julie Schram
- Kevin Scriber

Return to Index

Project Details 2012-2013

IceBite: An Auger And Sampling Systems For Ground Ice On Mars

Program Manager:
Dr. Diana Nemergut

Event Number: B-302-M

ASC POC/Implementer:
Addie Coyac / Jessica Jenkins

Mr. Christopher McKay (Principal Investigator)
cmckay@mail.arc.nasa.gov

National Aeronautics and Space Administration
Space Science Division
Moffett Field, California

Supporting Stations: McMurdo Station
Research Locations: Lake Joyce / University Valley

Project Description:

This project is funded by NASA ASTEP (Astrobiology Science & Technology for Exploring Planets). Researchers will develop an ice auger and sampling bit for sampling subsurface ice-cemented ground on Mars. Ice on Mars is an important target for astrobiology because ice-rich locations could have been sites of liquid water activity during periods of high obliquity and because ice may preserve organics. The IceBite drill will penetrate several meters into the ground ice to collect deeper, older ice and search for signs of organics and life. Dry permafrost in the McMurdo Dry Valleys offers Mars-like conditions in which to test the auger and sampling system. Researchers will also investigate the physics and microbiology of the samples they recover as an analog for Mars. The IceBite team includes experts from the Honeybee Robotics, McGill University, and the Canadian Space Agency.

Field Season Overview:

This is the final field season of for this project. Seven participants will first set up the drill in McMurdo to test the remote operations. The drill will then be moved to a site in the lower Taylor Valley while part of the team is in University Valley and nearby areas getting cores. After testing is complete in the lower valleys, that part of the team will join their colleagues at University Valley to demonstrate remote operations using an Iridium phone time-delay link.

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Deploying Team Members:

- Alfonso Davila
- Brian Glass
- Jacqueline Goordial
- Denis Lacelle
- Margarita Marinova (Team Leader)
- Christopher McKay (PI)
- Wayne Pollard

Return to Index

Project Details 2012-2013

CRREL 09-10 Activities

Program Manager:
Mr. George Blaisdell

Event Number: T-940-M
NSF Agreement

ASC POC/Implementer:
Brian Johnson / John Rand

Ms. Renee Melendy (Principal Investigator)
renee.melendy@us.army.mil

US Army Cold Regions Research & Engineering Lab
Hanover, New Hampshire

Supporting Stations: McMurdo Station
Research Locations:

Project Description:
There are several objectives expected for the T-940 activities during the 2013-14 Antarctic Field Season. We expect to be advised which projects will be funded in mid to late-August. The potential projects include engineering and basic research in support of the following: South Pole Traverse (SPoT); Support to McMurdo Airfields Improvements (SMAI); Under-Ice Exploration of SBT (SBT); South Pole Station Operations (SPSO); Sea-Ice Thickness Survey (SITS); Snow Road GPR Robotic Survey (GPR); Albedo Surveys on Pegasus Runway Using a Robot (ASPRR); Development of Fleet Management Plan (DFMP); Drainage Solutions Implementation (DSI); South Pole Utility Tunnel Maintenance (SPUTM); and McMurdo Master Planning - Drainage Study (MCMMP-DS)

More specific objectives for these projects are:

South Pole Traverse (SPoT): CRREL POC: James Lever 1) Assess route safety in areas where crevasses may be present by GPR and physical characterization. 2) Continued tests of a prototype cargo sled 3) Continued tests for sled performance and mobility improvements. 4) Experiments for Autonomous Guided Traverse Vehicles.

Support to McM Airfield CRREL POC: Chris Hiemstra & TJ Melendy 1) Ice/snow core surveys betweeen Pegasus and Mile Post 7 on Pegasus road

Fleet Management CRREL POC: TJ Melendy 1) Heavy equipment analysis

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

South Pole Station Operations (SPSO): CRREL POC: Lynette Barna 1) Work with NSF's Dick Armstrong and CRREL contractor John Rand on specified South Pole operations issues.

Field Season Overview:

Seven team members will deploy at various times, and to various locations throughout the season. They will use trucks, tracked vehicles and snowmobiles.

Deploying Team Members:

- Russ Alger
- Lynette Barna (Team Leader)
- Robert Davis
- Allan Delaney
- Margaret Knuth (Co-PI)
- Joel, Jr Kunnari
- Kevin Wilson

Return to Index

Project Details 2012-2013

Collaborative Research: Thermoregulation In Free-Living Antarctic Seals: The Missing Link In Effective Ecological Modeling

A juvenile Weddell seal wears telemetry gear that will record dive effort and surface heat patterns to help researchers calculate the energetic costs of being a seal in McMurdo Sound. Photo Credit: J. Skinner.

Program Manager:
Dr. Diana Nemergut

Event Number: B-470-M

ASC POC/Implementer:
John Rand / Cara Sucher

Dr. Jo-Ann Mellish (Principal Investigator)
b470.mellish@gmail.com

University of Alaska Fairbanks
School of Fisheries and Ocean Sciences
Seward, Alaska

Supporting Stations: McMurdo Station
Research Locations: Delbridge Islands / Erebus Glacier Tongue

Project Description:

Thermoregulation is an important physiological component of life in polar regions, yet little is known about the energetic requirements for thermoregulation in either air or water for polar species. The Weddell seal of the Ross Sea provides a unique model to investigate typical costs and the limits of thermoregulation for polar phocids due to the wide range of sizes and body condition available from pups to adults. These research objectives are based on the varied demographics of seals in the Erebus Bay population (size and body condition), and the ability to track and recapture these seals, and collect data recorded from free-ranging animals. This is a valuable model system with results that may be adapted to other polar species. Data of this quality simply cannot be collected elsewhere in either polar region. Researchers will deploy and recover telemetry instruments on 40 Weddell seals in Erebus Bay. The instruments will record heat flux and temperature, foraging behavior, and swim speed of free-ranging seals. Each telemetered animal will be evaluated for overall health (by analysis of a blood sample and

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

infrared thermography), body size, density, quantity of insulation (blubber depth measurements through imaging ultrasound) and quality of insulation (fat content of a blubber biopsy).

Field Season Overview:

The work will take place during two summer field seasons in and around McMurdo Station, at sea ice locations mainly in the vicinity of the Delbridge Islands and Erebus Glacier Tongue. The field effort will be based out of the Crary Lab with a fish hut on the sea ice for gear staging, shelter, and for operations requiring close support (e.g., processing biological samples). Six or seven participants will work in the lab and make day-trips to field locations. The sampling design involves capture and sedation of Weddell seals for health assessments and placement of telemetry gear and data recorders. Telemetered seals will have VHF and ARGOS transmitters attached for relocation and instrument recovery.

Deploying Team Members:

- Allyson Hindle (Co-PI)
- Markus Horning (Co-PI)
- Henry Kaiser
- Jo-Ann Mellish (PI)
- Mee-ya Monnin
- John Skinner

Return to Index

Project Details 2012-2013

Air-Sea Fluxes Of Momentum, Heat, And Carbon Dioxide At High Wind Speeds In The Southern Ocean

Program Manager:
Dr. Peter Milne

Event Number: O-278-N
NSF/PLR Award 1043623

ASC POC/Implementer:
Addie Coyac / Robert Kluckhohn

Dr. Scott Miller (Principal Investigator)
smiller@albany.edu

University at Albany
Atmospheric Sciences Research Center
Albany, New York

Supporting Stations: RV/IB Nathaniel B. Palmer
Research Locations: All vessel cruise tracks

Project Description:

An understanding of the exchange of carbon dioxide (CO2) between the air and sea in the Southern Ocean, in particular at high wind velocity, will enable researchers to better assess how projections of global climate warming in a windier world could affect the ocean's carbon uptake and alter the ocean's heat budget at high latitudes. During all cruises of the NBP this project's installed instrumentation will make continuous underway measurements of momentum, heat, water vapor and CO2 using micrometeorological eddy covariance techniques adapted to ship-board use. Data from another project (Colm Sweeney's O-214), which also makes continuous underway measurements, will be used in the overall analysis thus enabling internal consistency checks.

Field Season Overview:

One or two participants will deploy to a port call to install the equipment and will take part in an initial cruise to monitor the equipment and make adjustments. Staff technicians will provide support for mounting and installing the flux package on the bow mast and cable and tubing runs to the bosun locker. Anemometers will be installed at several locations at the bow and cameras to image the sea surface will (likely) be located in the ice tower above the bridge. While the ship is underway, time series data will be collected at 10-20 Hz and a daily Matlab script will compute preliminary air-sea fluxes. These data, along with system diagnostic values and shipboard

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

meteorological measurements will be sent to the PI's lab at SUNY Albany by email (estimated 100-200 Kbytes per day). The raw data will be stored to USB hard drives that will be sent by regular mail after each cruise.

Deploying Team Members:

- Brian Butterworth
- Scott Miller (PI)

Return to Index

Project Details 2012-2013

Analysis Of The Data From The Gattini Antarctic Camera Network

Program Manager:
Dr. Vladimir Papitashvili

Event Number: A-356-S
NSF/PLR Award 0839136

ASC POC/Implementer:
Samina Ouda / Paul Sullivan

Dr. Anna Moore (Principal Investigator)
amoore@astro.caltech.edu

California Institute of Technology
Astronomy
Pasadena, California

Supporting Stations: South Pole Station
Research Locations: Dark Sector

Project Description:

The Gattini network consists of three cameras located at the high-altitude Antarctic sites Dome C, Dome A, and South Pole. These star transit cameras monitor wide areas of the southern sky, taking an image every five to 15 minutes throughout the entire Antarctic winter season. The network has been in operation since the 2006 austral winter season, collecting data sets totalling in excess of three Terabytes. The project's data reduction and analysis effort will focus on two distinct areas: (1) Obtaining photometric light curves of the brightest and most interesting long-period variable stars in the southern sky, which have known parallaxes and other parameters and are unique stars with no counterparts in the Kepler spacecraft field; and (2) Producing astronomical site testing results that are critical for validating high-altitude Antarctic sites to allow planning of future large astronomical facilities.

Field Season Overview:

The Gattini-SP instrument was installed in January 2011 and has been operational since February 2011. Project researchers control the camera from their home institutions. This year, no project participants will deploy. Contract staff members will monitor the system and perform maintenance as needed.

Return to Index

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Project Details 2012-2013

Collaborative Research: The Seasonal Dynamics Of CO2, Primary Production, And DMS In The Western Antarctic Peninsula - Measurements Of Pools And Processes Using Mass Spectrometry

Program Manager:
Dr. Diana Nemergut

Event Number: B-003-P

ASC POC/Implementer:
Samina Ouda / Philip Spindler

Dr. Francois M Morel (Principal Investigator)
morel@princeton.edu

Princeton University
Department of Geosciences
Princeton, New Jersey

Supporting Stations: Palmer Station
Research Locations: Palmer Lab / Local boating area

Project Description:

This project has three primary research objectives: (1) Understand the seasonal cycle of surface ocean gas concentrations and biological productivity in the waters adjacent to Palmer Station using high resolution time-series measurements with membrane inlet mass spectrometry. (2) Quantify the dominant rate processes that produce and consume dimethylsulfide (DMS) in surface waters of the West Antarctic Peninsula (WAP) using isotopically-labeled tracer experiments. (3) Examine the potential sensitivity of primary productivity and carbon and S cycling to changes in surface water pCO2, temperature and irradiance regimes. This last objective will be met through sampling and process studies with natural plantkonic assemblages over the seasonal cycle, and through controlled incubation experiments.

Field Season Overview:

A rotating group of two or three field team members will deploy to Palmer Station for an overall occupation of about six months between October and March. The project will provide its specialized research equipment and utilize other standard laboratory facilities available at the station. They will use Zodiacs for periodic sampling of waters close to the main laboratory.

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Deploying Team Members:

- Elizabeth Asher
- John Dacey (Co-PI)
- Johanna Goldman
- Sven Kranz
- Philippe Tortell (Co-PI)
- Jodi Young

Return to Index

Project Details 2012-2013

CAREER: Protist Diversity And Function In The Dry Valley Lakes

Program Manager:
Dr. Diana Nemergut

Event Number: B-247-M
NSF/PLR Award 1056396

ASC POC/Implementer:
Elizabeth Watson / Cara Sucher

Dr. Rachael Morgan-Kiss (Principal Investigator)
morganr2@muohio.edu

Miami University
Oxford, Ohio

Supporting Stations: McMurdo Station
Research Locations: Dry Valleys / Lakes Bonney and Fryxell

Project Description:

The overall objectives of this project are to understand the metabolic versatility of single-celled eukaryotic microbial (protist) species residing in McMurdo Dry Valley (MDV) lakes and link protist trophic strategy with specific abiotic drivers (eg: temperature, light, nutrients). Specific objectives for this field season are: (1) Generate depth profiles of autotrophic and heterotrophic activity across select MDV lakes; (2) Identify taxonomic affiliation of mixotrophic protists at depths of mixed trophic activity; (3) Cultivate new photoautotrophic and mixotrophic protists from MDV lakes.

Field Season Overview:

Three participants will collect lake samples from Lakes Bonney (east and west lobes), Fryxell and Vanda at various depths through the water column during the summer season. They will be based at Lakes Bonney and Fryxell established camps and use labs there for sample processing. While at Lake Bonney, researchers will make one day trip to Lake Vanda to collect lake water. Helicopters will provide support for put-in, take-out, camp moves and returning samples to McMurdo.

Deploying Team Members:

- Jenna Dolhi
- Wei Li

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Rachael Morgan-Kiss (PI)

- Amber Siebenaler

Return to Index

Project Details 2012-2013

Redox Balance In Antarctic Notothenioid Fishes: Do Icefishes Have An Advantage?

Program Manager:
Dr. Diana Nemergut

Event Number: B-036-L/P

ASC POC/Implementer:
Addie Coyac / Philip Spindler

Dr. Kristin M. O'Brien (Principal Investigator)
kmobrien@alaska.edu

University of Alaska Fairbanks
Institute of Arctic Biology
Fairbanks, Alaska

Supporting Stations: ARSV Laurence M. Gould, Palmer Station
Research Locations: Fishing Grounds / Palmer Station aquaria and lab

Project Description:

This project seeks to understand the characteristics of physiology and biochemistry of Antarctic fishes that are compatible with life at body temperatures of about 0-degrees Centigrade. Researchers are particularly interested in differences in respiratory and cardiovascular physiologies between hemoglobinless (-Hb) icefishes and their red-blooded (+Hb) notothenioid relatives. This project focuses on the role of hemoglobin and myoglobin in promoting oxidative stress in Antarctic fishes.

Field Season Overview:

Participants will deploy onboard the ARSV Laurence M. Gould to collect specimens of Antarctic channichthyid icefish and red-blooded nototheniid species using Otter trawls and buoyed and anchored fish traps. The live specimens will be transported to Palmer Station's aquarium for sample preparation. At the station, team members will focus activities on measurements of protein turnover in whole animals, energetic costs of protein synthesis in isolated cells and preparation of frozen and fixed samples for return and more extensive analyses at the home institutions. Over the course of three LMG cruises, the group will alternatively fish and work in the Palmer Station labs. Fishing locations include Dallmann Bay (area of Astrolabe Needle), off the south shore of Low Island, the southeastern shore of Livingston Island and other areas. The group will also use sets of buoyed and anchored baited fish pots (traps). The advantage of

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

traps is that fishing operations can be conducted at sites where bottom trawls cannot be deployed successfully and recent experience has shown that baited pots are a more effective means of collecting some (but not all) of the target species than are benthic trawls. At Palmer Station, investigators will conduct experiments with live fishes and with material prepared from their tissues. They will occasionally use Zodiacs for hook-and-line fishing or setting fish traps in the local boating area.

Deploying Team Members:

- Elizabeth Crockett (Co-PI)
- Kristin O'Brien (PI)
- Jody Wujcik

Return to Index

Project Details 2012-2013

Bromide In Snow In The Sea Ice Zone

Graduate student Ross Lieb-Lappen erects a tower to collect blowing snow samples. Photo Credit: Ignatius Rigor.

Program Manager:
Dr. Peter Milne

Event Number: O-263-M

ASC POC/Implementer:
Addie Coyac / Jessica Jenkins

Dr. Rachel W Obbard (Principal Investigator)
rachel.w.obbard@dartmouth.edu

Dartmouth College
Thayer School of Engineering
Hanover, New Hampshire

Supporting Stations: McMurdo Station
Research Locations: Cape Bird Sea Ice

Project Description:

Tropospheric ozone depletion events (ODEs) are a phenomenon associated with the sea ice zone, and are routinely observed in the springtime at coastal locations when incoming winds have traversed sea ice covered areas. ODEs are caused by high levels of bromine gas (BrO and Br). Rapid formation of bromine gas, called the "bromine explosion," requires available seawater brine (containing bromide ions) and a high surface area. Snow on sea ice is thought to provide the bromide (Br) the surface area for this reaction, and the means for Br to enter the boundary layer atmosphere. Meteorological analysis has shown that most Ross Sea locations receive a majority of their wind from the continent from September until November. Historical meteorological records show that the Cape Bird Automatic Weather Station (AWS) receives more than two thirds of its wind from over sea ice.

Field Season Overview:

Two participants will deploy to McMurdo and make helicopter-supported day-trips to the Cape Bird and Marble Point AWS sites. They will use snow machines to collect snow samples within 4 kilometers of McMurdo Station. Cape Bird and Marble Point samples will be collected every-other-day as weather permits. On each visit, they will also collect snow from three locations walking distance apart, and one sea ice core using a Kovacs corer.

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

During a visit early in the field season, they will erect a tower with snow collection and collect samples from it on subsequent visits, and remove it before the end of our sampling.

Deploying Team Members:

- Ross Lieb-Lappen
- Rachel Obbard (PI)

Return to Index

Project Details 2012-2013

Ocean Acidification–Category 1: Identifying Adaptive Responses Of Polar Fishes In A Vulnerable Ecosystem

Program Manager:
Dr. Diana Nemergut

Event Number: B-199-M

ASC POC/Implementer:
John Rand / Beverly Walker

Dr. Sean Place (Principal Investigator)
places@mailbox.sc.edu

University of South Carolina
Department of Biological Sciences and Marine Science
Columbia, South Carolina

Supporting Stations: McMurdo Station
Research Locations: Cape Evans / Inaccessible Island / New Harbor / Sea Ice / Crary Lab

Project Description:

This project aims to understand the interaction of two oceanographic features—ocean acidification and the projected rise in mean sea surface temperature—on the performance of Notothenioids, the dominant fish of the Antarctic marine ecosystem. Understanding the physiological trade-offs that may occur under certain conditions will provide valuable insight into the capacity for fish species to cope with rapid environmental changes such as those expected under global climate change scenarios. Analysis will include whole organism performance metrics, along with standard molecular and cell biology approaches to assess cellular damage. Researchers will employ evolutionary approaches to map variation in physiological responses onto the phylogeny of these fishes and characterize genetic diversity within species.

Field Season Overview:

Starting in the August Winfly period, project participants will collect seven species of Notothenoid fishes by hook and line fishing in shallow water and/or by setting baited fish traps on the ocean floor at 400-800 meter depths. In the Crary Phase III aquarium, specimens will be acclimated to seawater conditions expected under future atmospheric carbon dioxide (CO2) projections. Two participants will arrive at Winfly and three more will arrive at mainbody. The five will remain on station until late December to take full advantage of sea ice viability for surface travel and allow

Project Indexes
Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites
Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season
Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

acclimation to take place over three months.

Deploying Team Members:

- Allison Barden
- Laura Enzor
- Evan Hunter
- Sean Place (PI)

Return to Index

Project Details 2012-2013

The Physiological Ecology Of Two Antarctic Icons: Emperor Penguins And Leopard Seals

Program Manager:
Dr. Diana Nemergut

Event Number: B-197-M

ASC POC/Implementer:
Addie Coyac / Elizabeth Kauffman

Dr. Paul Ponganis (Principal Investigator)
pponganis@ucsd.edu

Scripps Institution of Oceanography
CMBB (Center for Marine Biotechnology and Biomedicine)
La Jolla, California

Supporting Stations: McMurdo Station
Research Locations: Beaufort Island / Capes Crozier and Washington

Project Description:

Emperor penguins and leopard seals are iconic, top predators in Antarctica. Their environment now faces the potential threats of climate change, pollution, and overfishing. The physiological ecology of these two species is key to the assessment of their adaptability to environmental change and alterations in prey distribution. Because of the difficulty of studying these animals, many details of their natural history and roles in the Antarctic ecosystem are as yet undocumented. Even less is known about the physiological adaptations that underlie their foraging success and diving behavior at sea. This project will expand knowledge of emperor penguin diving physiology to foraging dives at sea, and to initiate investigation of the foraging behavior/prey intake rate of the rarely studied leopard seal. The work will continue the trend analysis of the Ross Sea emperor penguin population that was begun by Dr. Gerald Kooyman in the 1980's and continued by this PI through 2008. Such long-term monitoring is needed and is of exceptional value in light of the potential linkage of declines in other emperor penguin populations to climate change.

Field Season Overview:

This is the last field season for this three-year project. Helicopter aerial surveys will be conducted of the Ross Sea emperor penguin colonies at Cape Crozier and possibly Beaufort Island. The Basler will be used for aerial photo censusing of Cape Colbeck on one flight, and Cape Roget, Coulman

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Island, Cape Washington and Franklin Island on another flight. There are no field deployments or laboratory studies.

Deploying Team Members:

- Katherine Ponganis
- Paul Ponganis (PI)

Return to Index

Project Details 2012-2013

Developmental Mechanisms For The Evolution Of Bone Loss

Program Manager:
Dr. Diana Nemergut

Event Number: B-029-L/P

ASC POC/Implementer:
Addie Coyac / Philip Spindler / Robert Kluckhohn

Dr. John Harvey Postlethwait (Principal Investigator)
jpostle@uoneuro.uoregon.edu

University of Oregon
Eugene, Oregon

Supporting Stations: ARSV Laurence M. Gould, Palmer Station

Research Locations:

Project Description:

This project will study the adaptive evolution of degenerative bone loss over geological time in Antarctic icefish and how it mimics the maladaptive development of osteopenia over ontogenetic time in an aging human. Genes and gene pathways whose bone building activities or bone destruction activities changed during icefish evolution are likely related to those that are altered in activity in human bone loss diseases. Thus, the long-term goal of the project is to characterize the genetic and phenotypic differences between related species of Antarctic fish with osteopenic versus normal skeletons (icefish and rockcod, respectively) and thereby identify new candidate genes, new genetic pathways, and new potential mechanisms for human bone degeneration diseases.

Deploying Team Members:

- Bill Detrich (Co-PI)
- Urjeet Khanwalkar
- John Postlethwait (PI)
- Eileen Sheehan

Return to Index

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Project Details 2012-2013

Test Of Lorentz Invariance At The South Pole

Program Manager:
Dr. Vladimir Papitashvili

Event Number: A-103-S
NSF/PLR Award 1142032

ASC POC/Implementer:
Elizabeth Watson / Paul Sullivan

Dr. Michael V Romalis (Principal Investigator)
romalis@princeton.edu

Princeton University
Princeton, New Jersey

Supporting Stations: South Pole Station
Research Locations: (South Pole Other site - not listed)

Project Description:

This project will test Lorentz invariance by placing an atomic spin sensor at the South Pole, where it will be unaffected by Earth rotation. The experiment will constrain several possible forms of Lorentz violation in the sensitivity range where the effects of quantum gravity can be expected, improving existing limits by a factor of 103. The goal for the season is to use the experience of operating the Lorentz violation experiment at the South Pole to further improve its sensitivity. The two current sources of uncertainty are random noise and systematic drifts. Some of this noise is intrinsic to the apparatus and some is caused by environmental disturbances. Researchers plan to address both sources of noise by making upgrades to the apparatus and by mitigating environmental effects.

Field Season Overview:

Field team members will make hardware upgrades to the apparatus and train a research assistant on its operation.

Deploying Team Members:

- Michael Romalis (PI)
- Marc Smiciklas

Return to Index

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Project Details 2012-2013

Astrobiology Science And Technology For Exploring Planets

Program Manager:
Dr. Charles Amsler

Event Number: B-259-M
NSF/PLR Award 11-ASTEP11-0007

ASC POC/Implementer:
Brian Johnson / Leslie Blank

Dr. Britney Elyce Schmidt (Principal Investigator)
britneys@ig.utexas.edu

University of Texas Austin
Insitiute for Geophysics
Austin, Texas

Supporting Stations: McMurdo Station
Research Locations: McMurdo Ice Shelf

Project Description:

We requested 19 science days of shared ship time (R/V Gould) for benthic and plankton sampling along the southwestern portions of the Antarctic Peninsula into the Bellingshausen Sea. We anticipate a round trip from Punta Arenas, Chile.

We have been approved for 6 berths funded by NSF and hope to add up to 8 additional berths pending NSF approval (Expenses for travel and medical will be covered by the grantees and not NSF.) Leaving from Punta Arenas, we will transit to the Antarctic Peninsula and we assume we will have to stop at Palmer station (but the schedule is still in flux). From there will proceed to Marguerite Bay then south and east into the Bellingshausen Sea as ice and weather permit.

Our goal is to sample as broad a geographic breadth as possible. We consider sampling opportunistic and we do not have exact locations. Instead we take what the ice will give us; in other words we will stick to the ice edge. On previous cruises this flexibility has yielded useful results. Thus we typically avoid the ice when possible.

If extra berths are approved, we will have sufficient personnel to work with 2 teams in shifts (thus maximizing shiptime). If only 6 persons are approved we will only be able to run one shift a day.

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Sampling will consist of mainly of benthic sled and trawl type devices. The Blake trawl will be our workhorse, but well will have several pieces of equipment as backup (e.g., Agassiz trawl, rock dredge,box core, multicore, Van Veen). We will also use the Yo-Yo camera to conduct bottom transects. If possible a few planktonic samples may be obtained. If there are questions or concerns about what we can do/need to do, please contact Halanych and he can provide more details.

Field Season Overview:

The overarching goal of the proposed work is to provide an evolutionary understanding of how marine benthic organisms (including their larvae) are genetically structured and physically distributed in the Western Antarctic. This information will have direct implications for understanding past and future range shifts of organisms. In particular, we will examine larval distributions and assess if distributions are consistent with patterns of genetic connectivity within Antarctic waters. To this end, we will employ an integrative approach that focuses on the genetic signatures of historical gene flow or isolation.

These data will be examined in light of known processes in Antarctic waters that potentially influence advection of larvae around Antarctica. Hypothesis: Herein, our objectives are designed to test a major, but poorly explored, assumption about Antarctic biology: Ho = Antarctic species of benthic invertebrates have sufficient gene flow to maintain broad, possibly circumpolar, panmictic distributions.

Using this generalized null hypothesis and by examining multiple species with different life histories, we have begun to build a more holistic view of the factors controlling Southern Ocean biodiversity, biogeography and evolutionary history.

Deploying Team Members:

- Britney Schmidt (PI)

Return to Index

Project Details 2012-2013

Palmer Long Term Ecological Research (LTER): Looking Back In Time Through Marine Ecosystem Space, Phytoplankton Component

Program Manager:
Dr. Lisa Clough

Event Number: B-019-L/P
NSF/PLR Award 0823101

ASC POC/Implementer:
Samina Ouda / Philip Spindler

Dr. Oscar Schofield (Principal Investigator)
oscar@marine.rutgers.edu

Rutgers University
Institute for Marine & Coastal Sciences
New Brunswick, New Jersey

Supporting Stations: ARSV Laurence M. Gould, Palmer Station
Research Locations: LTER Study Site / Palmer Station

Project Description:

Long Term Ecological Research (LTER) researchers seek to understand how changes in phytoplankton dynamics, such as an increase in fresh water due to melting ice, propagate through the ecosystem, ultimately affecting fish, seabirds, and marine mammals. Because photosynthesis is driven by sunlight, characterizing the quality and quantity of light available for use by phytoplankton is important. Researchers will deploy a wide range of sensors to measure these optical properties, which, in turn, will help understand the underlying role of light variability in phytoplankton dynamics. In addition to their role at the base of the marine ecosystem, the fate of phytoplankton biomass is important to understanding climate change feedback. By conducting experiments to study phytoplankton physiology, researchers hope to develop a clear picture of the fate of phytoplankton biomass once it enters the Antarctic ecosystem.

Field Season Overview:

Field team members will (1) Maintain the phytoplankton Palmer time series measurements at LTER stations B and E. The time series consists of water collection for HPLC, 14C productivities, and chlorophyll a measurements. These measurements are complemented with a full array of multi- and hypersectral optical measurements. Efforts will focus on resolving both the apparent and inherent optical properties. The optics will be complemented by

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

CTD measurements; (2) Expand glider operations to fly four gliders: One FIRe glider, one ADCP glider, and a backscatter glider. These gliders are 200-meter vessel class. One deep 1000-meter glider will be launched and flown to Rothera base; (3) Work with Debbie Steinberg's LTER team, to calibrate the glider ADCP instruments using live zooplankton (krill, salps, etc.) maintained at Palmer

Project participants will also sail onboard the annual 28-day LTER cruise onboard the Laurence M. Gould (LMG) from January 1 to February 15th. Vessel-based activities include collecting samples by trawling, conducting multiple CTD casts, deploying gliders and servicing five physical oceanographic moorings. A sediment trap mooring will be recovered and re-deployed at the LTER site near Hugo Island. Three- to five-day field camps will take place on Avian and Charcot Islands. Zodiac support is required for deploying to these field sites, as time and ice conditions permit. During the time at process stations, Zodiac support will be allocated for glider operations and to deploy satellite tags on baleen whales, collect biopsy samples, and individual photo-ID data. Two fully-equipped radioisotope vans will be used for C14 and for 3H (tritium).

Deploying Team Members:

- Ana Filipa Carvalho
- Nicole Couto
- Mikaela Provost
- Grace Saba
- Dena Seidel

Return to Index

Project Details 2012-2013

Investigating (Un)Stable Sliding Of Whillians Ice Stream And Subglacial Water Dynamics Using Borehole Seismology: A Component Of The Whillans Ice Stream Subglacial Access Research Drilling (WISSARD) Project

Program Manager:
Dr. Lisa Clough

Event Number: C-525-M
NSF/PLR Award 1043784

ASC POC/Implementer:
John Rand / Brian Johnson

Dr. Susan Schwartz (Principal Investigator)
sschwartz@pmc.ucsc.edu

University of California Santa Cruz
Earth Sciences
Santa Cruz, California

Supporting Stations: McMurdo Station
Research Locations: Subglacial Lake Whillans

Project Description:

A component of WISSARD, this project focuses on deployment of a surface passive seismic network and an array of borehole seismometers on Whillans Ice Stream (WIS), in the vicinity of Subglacial Lake Whillans (SLW). The seismic data will help to reveal the role of subglacial hydrology in controlling temporal variability of ice stream dynamics and mass balance. Specifically, borehole seismology will allow basal earthquakes and seismic signals generated by subglacial hydrology to be recorded and studied that are orders of magnitude smaller and have a more complete frequency content than possible using surface instrumentation alone. Determination of the source characteristics of basal events will permit the role of small asperities or 'sticky spots' in controlling basal motion to be assessed. The study area experiences large changes in ice velocity in response to tidally triggered stick-slip cycles of WIS and periodic filling and draining of SLW, allowing the characteristics of basal motion during fast and slow ice movement and subglacial lake inflow, outflow, and quiescence to be compared.

Field Season Overview:

Two participants will deploy to McMurdo and to the WISSARD work site in West Antarctica. Using the portable ice drill, they will punch two 600-meter boreholes in the vicinity of the main WISSARD borehole (up to a few

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

kilometers away) and deploy borehole seismometer strings in each hole. In addition to the borehole instrumentation, team members will deploy a small network (ten stations) of surface seismometers around the boreholes. If the portable drill is not available they will deploy one borehole string in the main WISSARD hole after all other activities have been completed.

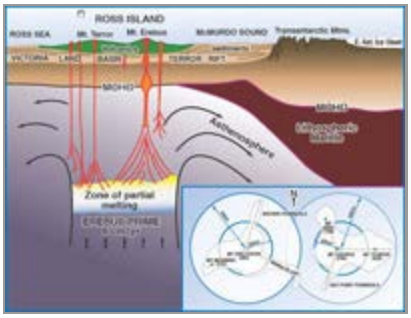
Deploying Team Members:

- Grace Barcheck
- Jorge Quesada

Return to Index

Project Details 2012-2013

A Geochemical Study Of The Nature And Evolution Of Mantle Upwelling Beneath Ross Island And Its Relationship To Tectonics In The West Antarctic Rift System



Conceptual diagram of the Erebus mantle plume. Graphic courtesy of Ken Sims.

Program Manager:
Dr. Mark Kurz

Event Number: G-092-M
NSF/PLR Award 1141167

ASC POC/Implementer:
John Rand / Jessica Jenkins

Dr. Kenneth W Sims (Principal Investigator)
ksims7@uwyo.edu

University of Wyoming
Department of Geology and Geophysics
Laramie, Wyoming

Supporting Stations: McMurdo Station
Research Locations: Capes Bird and Crozier / Mounts Bird and Terror

Project Description:

This project will conduct a detailed field- and laboratory-based geochemical study to investigate the magmagenesis of alkaline volcanism across Ross Island. This study will provide state of the art, major and trace element and isotopic (Nd, Hf, Sr, Pb) data for Mount Terror (3262 meters, 1700 cubic kilometers), Mount Bird (1800 meters, 470 cubic kilometers), and Hut Point Peninsula (100 cubic kilometers). The goals of this research will be to combine these new geochemical data with the existing Mount Erebus data to: (1) Examine the hypothesis that volcanism on Ross Island is controlled by mantle upwelling in the form of a small mantle plume or hot spot. Plume models predict spatial and temporal variations in the extent of magmatism and in the compositions of the erupted lavas that need to be examined across Ross Island. (2) Better understand the genesis of alkaline volcanism, both at Ross Island and globally. Being a major center of alkaline volcanism on a global scale, Ross Island represents an important opportunity to better understand the poorly understood genesis of primitive basanites and their subsequent evolution.

Field Season Overview:

Project Indexes
Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites
Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season
Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Participants will be based at McMurdo Station to undertake sampling of volcanic rocks around the coast of Ross Island especially in Lewis Bay. They will use helicopter support to collect samples on the sea ice close to the shore and near cliff sections. They will use snow machines and tracked vehicles to collect samples along Hut Pont Peninsula. In the November timeframe, the group will occupy the New Zealand Antarctic Program's hut at Cape Bird and later the Fang Glacier camp. Helicopter close support will enable them to sample Mount Bird's summit and along the coast in addition to the small volcanic cones between Cape Crozier and Mounts Terror and Terra Nova.

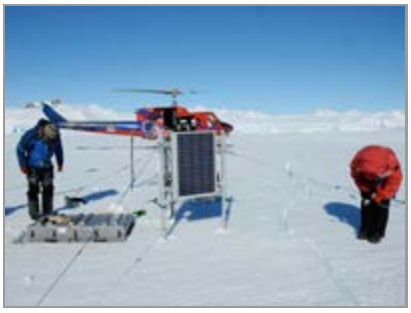
Deploying Team Members:

- Glenn Gaetani
- Philip Kyle (Co-PI)
- Daniel Rasmussen
- Kenneth Sims (PI)
- Paul Wallace
- Erin Writer

Return to Index

Project Details 2012-2013

Collaborative Research: Byrd Glacier Flow Dynamics



Program Manager:
Dr. Julie Palais

Event Number: I-351-M

ASC POC/Implementer:
Leslie Blank / Brian Johnson

Dr. Leigh Stearns (Principal Investigator)
stearns@ku.edu

University of Kansas Lawrence
Department of Geology
Lawrence, Kansas

Supporting Stations: McMurdo Station
Research Locations: Byrd Glacier

Project Description:

The overall aim of this project is to improve our understanding of outlet glacier dynamics in East Antarctica through an in-depth field study of Byrd Glacier. Project researchers will test several hypotheses: (1) Byrd Glacier experiences variability in flow speed at a variety of timescales (daily to seasonal to annual) as a response to tidal and hydrological forcings; (2) the configuration of Byrd Glacier's grounding line makes it susceptible to rapid retreat up the fjord; and (3) subglacial lakes in the catchment fill and drain on a regular basis and provide periodic forcing of a glacier flow response. This multi-disciplinary project will install a dense network of GPS receivers on the grounded glacier and floating ice shelf. The GPS observations will be merged with remote sensing datasets to examine spatial and temporal variability in glacier flow, and constrain a numerical model of the glacier's dynamics. This work will provide new insights into the basal boundary conditions of "isbrae"-type outlet glaciers, and the e ffect of transient perturbations (e.g., ocean tides, subglacial floods) on their flow regime.

Field Season Overview:

The project team will deploy once in the austral spring (October/November) and again in the austral fall (January/February). From their McMurdo base, they will make helicopter-supported day-trips to perform maintenance on a network of GPS receivers deployed at eight sites on and surrounding Byrd Glacier. These sites were last visited in February 2012. During the second deployment in February 2013, all on-ice installations will be removed,

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

marking the end of this three-season field campaign. Three remaining instruments installed on mountaintops overlooking the glacier will be transferred to the custody of the POLENET project.

Deploying Team Members:

- Peter Braddock
- Sarah Child
- Gordon Hamilton (Co-PI)
- Michael Roberts
- Jessica Scheick
- Leigh Stearns (PI)

Return to Index

Project Details 2012-2013

Glacial-Interglacial History Of West Antarctic Nunataks And Site Reconnaissance For Subglacial Bedrock Sampling

Program Manager:
Dr. Julie Palais

Event Number: I-414-M

ASC POC/Implementer:
John Rand / Elizabeth Kauffman

Dr. John Stone (Principal Investigator)
stone@ess.washington.edu

University of Washington
Department of Earth and Space Sciences
Seattle, Washington

Supporting Stations: McMurdo Station
Research Locations: Whitmore Mountains / Nash and Pirrit Hills

Project Description:

This project's long-term goal is to determine whether the West Antarctic Ice Sheet was substantially thinner in the past, by measuring cosmic ray produced nuclides in subglacial bedrock surfaces. The presence of cosmic ray produced nuclides would conclusively indicate that shielding ice cover was absent in the past. This project is the reconnaissance phase of the work, in which researchers will locate suitable drilling targets beneath the ice sheet. Specific objectives are: (1) Geological reconnaissance of the Whitmore Mountains, Nash and Pirrit Hills; (2) At each of these locations carry out densely spaced ice-penetrating radar surveys of the surrounding ice sheet to locate broad subglacial bedrock ridges suitable for cosmogenic nuclide sampling and measurements; (3) Collect bedrock samples and short-core depth profiles on the emerged parts of the same mountain ridges for cosmogenic nuclide measurements. These measurements will establish the history of ice-sheet cover at times when ice was thicker than present. Future subglacial bedrock measurements will address ice-sheet cover at times when ice was thinner than present.

Field Season Overview:

Six participants will deploy to McMurdo and thence to the field sites on the West Antarctic Ice Sheet. LC-130 support will provide the initial put-in at the Whitmore Mountains camp site and the final take-out from Pirrit Hills. Camp

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

moves to Nash Hills and Pirrit Hills will be accomplished by Twin Otter or by snow machine traverse. At the field sites, the field team will perform snow machine-based ground-penetrating radar and travel to outlying nunataks from each camp site.

Deploying Team Members:

- Howard Conway (Co-PI)
- Maurice Conway
- Perry Spector
- John Stone (PI)
- Mika Usher

Return to Index

Project Details 2012-2013

An Integrated Ecological Investigation Of McMurdo Dry Valley's Active Soil Microbial Communities

Program Manager:
Dr. Charles Amsler

Event Number: B-330-M
NSF/PLR Award 1142102

ASC POC/Implementer:
Addie Coyac / Cara Sucher

Dr. Cristina Takacs-Vesbach (Principal Investigator)
cvesbach@unm.edu

University of New Mexico
Albuquerque, New Mexico

Supporting Stations: McMurdo Station
Research Locations: Taylor and Wright Valleys

Project Description:

Because the McMurdo Dry Valley (MDV) soil bacterial community this is a microbially dominated system, knowing what fraction of the microbial diversity of the region is active and what functional role it plays is critical to understanding the ecology of the MDV. Equipped with recent advances in molecular microbial ecology techniques including highly sensitive techniques like pyrosequencing and stable isotope probing, researchers can now directly study the active members of a community, even in a low biomass system like the MDV. This project will investigate the active portion of the MDV bacterial community using an integrated molecular ecology approach to (1) identify active members; (2) determine their metabolic functions in situ; and (3) develop a habitat suitability model describing the abiotic controls on bacterial activity. The overall objective of this project will be to identify active members of the Dry Valley soil microbial community and determine their ecological role.

Field Season Overview:

Five participants will deploy to Taylor and Wright Valleys to establish soil sampling and experimental plots. Plots will be established prior to melt so that temporal variations in microbial community composition and function can be monitored. In situ manipulative experiments will be conducted each year to directly test the effect of increased carbon and moisture on microbial activity, diversity, and function. Major activities include flying to and from established field camps and plots, and walking to sampling sites whenever

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

possible.

Deploying Team Members:

- Heather Buelow
- David Van Horn (Co-PI)
- Caitlin Wolf

Return to Index

Project Details 2012-2013

Life In A Volcanic Landscape: Early Jurassic Paleoenvironments And Paleobotany

Jurassic fern fossil from Carapace Nunatak. Photo courtesy of Edie Taylor.

Program Manager:
Dr. Mark Kurz

Event Number: G-496-M

ASC POC/Implementer:
Elizabeth Watson / Jessica Jenkins

Dr. Edith Taylor (Principal Investigator)
etaylor@ku.edu

University of Kansas Lawrence
Department of Ecology and Evolutionary Biology
Lawrence, Kansas

Supporting Stations: McMurdo Station
Research Locations: Southern Victoria Land

Project Description:

The record of Jurassic plant life in continental Antarctica is sparse, possibly due to tectonic and magmatic activity associated with the breakup of Gondwana and the emplacement of the Ferrar Large Igneous Province. This project will examine early Jurassic floras and paleoenvironments in southern Victoria Land, using sedimentology, stratigraphy, geochemistry, and paleobotany. The work will provide much-needed baseline data on the composition of the floras as well as the depositional and growth environments of these southernmost floras. The data will contribute to understanding plant life and paleoenvironment in Antarctica during a time of increasing volcanism and provide floral information that can be compared to other, better known floras elsewhere in Gondwana.

Field Season Overview:

Participants will deploy to a deep field camp at Carapace Nunatak in Southern Victoria Land for several weeks. They will collect fossil plants and conduct reconnaissance of one or two other known Jurassic-age sites in Southern Victoria Land (Allan Hills or Coombs Hills). Collected specimens will

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

be returned to the home institution for processing and analysis.

Deploying Team Members:

- Bemjamin Bomfleur
- David Buchanan
- Anne-Laure Decombeix
- Erik Gulbranson (Co-PI)
- John Isbell (Co-PI)
- Patricia Ryberg (Team Leader)
- Rudolph Serbet (Team Leader)
- Brian Staite

Return to Index

Project Details 2012-2013

Microbe-Metazoan Interactions In An Antarctic Infaunal Community

Program Manager:
Dr. Diana Nemergut

Event Number: B-004-M

ASC POC/Implementer:
Elizabeth Watson / Beverly Walker

Dr. Andrew Thurber (Principal Investigator)
athurber@coas.oregonstate.edu

Oregon State University
College of Oceanic & Atmospheric Sciences
Corvallis, Oregon

Supporting Stations: McMurdo Station
Research Locations: Cape Armitage / Crary Aquarium

Project Description:

This project aims to identify the role of naturally occurring bacteria in the long term persistence of an Antarctic soft-sediment community. Using collected sediment cores kept intact in the aquarium, researchers will remove bacterial activity and add phytoplankton to identify how carbon is passed to the animals throughout the different seasons at McMurdo. It is thought that that during the initial deposition of food that the bacteria and the animals compete for the same food source but as the winter sets in the bacteria are able to sustain the communities through breaking down less and less digestible food sources.

Field Season Overview:

The field party will deploy at Winfly and collect cores as soon as possible off of Cape Armitage. It is important that these samples are collected prior to onset of spring. A variety of sediment cores will be kept in the Crary Aquarium with a flow through seawater system in the dark for six weeks and undergo manipulative treatments including antibiotics addition and adding pregrown freeze-dried phytoplankton (that is native to the Antarctic). Samples will be taken throughout, frozen or preserved for microbial community analysis and a subset will be sorted under a dissecting scope live. Periodic resampling of the sediment community will occur through November and a second short deployment will occur during early February to collect additional samples.

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Deploying Team Members:

- Andrew Thurber (PI)
- Rory Welsh

Return to Index

Project Details 2012-2013

The Hidden Light Of Antarctica

Program Manager:
Mr. Peter West

Event Number: W-493-M

ASC POC/Implementer:
John Rand / Cara Sucher

Ms. Diane Tuft (Principal Investigator)
diane@dianetuft.com

New York, New York

Supporting Stations: McMurdo Station
Research Locations: Cape Bird (overnight only) / McMurdo Dry Valleys / Mount Erebus

Project Description:

Photographer Diane Tuft has been photographing the visual effects of both infrared and ultraviolet light on the landscape for 14 years. Of all the continents, Antarctica has the largest amount of ozone depletion which effects the amount of ultraviolet light transmitted to the surface. Working with Lars Kalnajs' tropospheric ozone climatology project (O-324), Ms Tuft will capture images, in the ultraviolet and infrared wavelengths, using a variety of digital and manual cameras. The photography will be primarily aerial, but will include some ground-based work. In addition to taking photographs, Ms Tuft will also record sounds and observe the shapes of Antarctica. From these materials, she will develop a show which will include photographs, an installation and a book.

Field Season Overview:

Two participants will travel to three sites in the Ross Island region. They will also visit Lower Mount Erebus, the Dry Valleys and Cape Bird. Using helicopter support, they will conduct aerial photography of the coastline of the Ross Sea.

Deploying Team Members:

- Murphy Munday-Goldman
- Diane Tuft (PI)

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Return to Index

Project Details 2012-2013

Spectral And Broadband Albedo Of Antarctic Sea-Ice Types

Program Manager:
Dr. Peter Milne

Event Number: O-201-E

ASC POC/Implementer:
Addie Coyac / Cara Ferrier

Dr. Stephen Warren (Principal Investigator)
sgw@atmos.washington.edu

University of Washington
Atmospheric Sciences Dept.
Seattle, Washington

Supporting Stations: Special Project
Research Locations: Aurora Australis

Project Description:

This project will measure spectral albedo of Antarctic sea-ice types and light-absorbing impurities in snow on Antarctic sea ice.

Field Season Overview:

Two team members will join the SIPEX-II voyage of the Aurora Australis, as guests of the Australian Antarctic Division. The research will take place from 16 September to 5 November, 2012.

Deploying Team Members:

- Stephen Warren (PI)
- Maria Zatko

Return to Index

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Project Details 2012-2013

Polenet East: An International Seismological Network For East Antarctica

Program Manager:
Dr. Alexandra Isern

Event Number: G-089-M/S

ASC POC/Implementer:
Leslie Blank / Paul Sullivan

Dr. Douglas Wiens (Principal Investigator)
doug@wustl.edu

Washington University
Department of Earth and Planetary Sciences
St. Louis, Missouri

Supporting Stations: McMurdo Station, South Pole Station
Research Locations: East Antarctica

Project Description:

This is a continuation of the passive seismic study of the Gamburtsev Mountains which collects data contemporaneously with other Antarctic programs seismic arrays. The research addresses the following questions: (1) How have the Gamburtsev Mountains formed? (2) What is the role of topography and heat flow in the formation of continental ice sheets in East Antarctica? (3) What is the geologic and tectonic history of the East Antarctic craton? (4) How do tectonics and regional heat flow control the formation, distribution and stability of subgalcial lakes in East Antarctica?

Up to this point the data return has been excellent. This analysis is providing the first detailed seismic constraints on crustal and upper mantle structure beneath and surrounding the Gamburtsev Mountains, on the processes which support the high elevation of this region, on the regional distribution of heat flow, and on the tectonic framework of the interior of the East Antarctic shield.

Field Season Overview:

Participants will deploy to McMurdo and East Antarctica to visit each of the eight broadband seismic stations in the POLENET EAST / AGAP seismic array. Last year the stations were fully serviced and batteries were replaced, so this field season the field team will collect data acquired over the past year. They will acclimatize at South Pole and use fixed-wing air support to

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

make day trips into the field.

Deploying Team Members:

- Patrick Shore (Team Leader)
- Guy Tytgat

Return to Index

Project Details 2012-2013

Geophysical Investigation Of Marie Byrd Land Lithospheric Evolution -- GIMBLE

Program Manager:
Dr. Mark Kurz

Event Number: G-099-M

ASC POC/Implementer:
Brian Johnson / Leslie Blank

Dr. Duncan A Young (Principal Investigator)
duncan@ig.utexas.edu

University of Texas Austin
Insitiute for Geophysics
Austin, Texas

Supporting Stations: McMurdo Station
Research Locations: Byrd Camp

Project Description:

Marie Byrd Land represents a significant highland dividing the Amundsen Sea Embayment (ASE) of West Antarctica from its Ross Embayment. Its topographic evolution likely played a key role in the origin of the West Antarctic Ice Sheet. A number of contesting hypotheses for the origin of Marie Byrd Land make predictions for the potential fields and the geomorphology of the underlying crust. This project will perform a 16-flight aerogeophysical survey of Marie Byrd Land, collecting three key datasets: gravity, magnetics and radar data. Gravity with collocated radar will be used to constrain the compensation state of Marie Byrd Land; magnetics will be used to assess the potential for ongoing sub-ice volcanism (and thus qualitatively assess heat flow); and ice-penetrating radar will be used to map out, at 5-kilometer resolution, the topography of the interior slope of Marie Byrd Land's bedrock, to understand the evolution of erosion and thus regional topography.

Field Season Overview:

The overall objective of this cruise is to conduct a reconnaissance survey of the region of the Totten Glacier System, including the Moscow University Ice Shelf (Sabrina Coast, East Antarctica) in February 2014 in order to: (1) evaluate the recent behavior of the glacial system, based on seafloor morphology, sub bottom profiling, high-resolution seismic imaging and marine sediment core evaluation, (2) to elucidate the longer term role of the

Project Indexes

Find information about current USAP projects using the principal investigator, event number station, and other indexes.

Project Web Sites

Find more information about USAP projects by viewing individual project web sites.

2012-2013 Field Season

Other Information:

- Home Page
- Station Schedules
- Air Operations
- Staffed Field Camps
- Event Numbering System

Totten Glacier as it responded to late Quaternary changes in climate and sea level, and (3) assess the present day physical oceanographic and particulate dynamic processes associated with the Totten Glacier tongue and the deep basins that surround it. If time and conditions allow, we will sample alternate areas of work including secondary targets along the Wilkes Land Margin and Oates Coast, including the nearby Mertz Trough, as well as adjacent Frost, George V and Cook Glacier systems, and potentially reaching to the Shackleton Ice Shelf system (Denman Glacier) to complement and support the over-arching science objectives of this proposal by providing concrete west-east transit targets that will contribute to our knowledge of the sedimentary record of sub-glacial melt water outflow and the time of ice retreat from the Wilkes Land Margin.

Deploying Team Members:

- Gonzalo Echeverry (Team Leader)
- Jamin Greenbaum (Team Leader)
- Chad Greene
- Gail Gutowski
- Gregory Ng
- Evelyn Powell
- Thomas Richter
- Duncan Young (PI)

Return to Index